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872.  
United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF  
EXPERIMENT STATIONS DURING JANUARY  
AND FEBRUARY, 1906.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA TUSKEGEE STATION, Tuskegee, G. W. Carver, Director.

Successful Yields of Small Grain. By G. W. Carver. (Bulletin No. 8, pp. 10, figs. 6.)

This is a continuation of Bulletins 6 and 7 of this station and summarizes the results of experiments conducted by the station to show the profitableness of grain growing in that section of Alabama.

ALASKA STATIONS, Sitka, C. C. Georgeson, Special Agent in Charge.

Vegetable Growing in Alaska. By C. C. Georgeson. (Bulletin No. 2, pp. 46, pls 5.)

"This bulletin gives suggestions regarding the choice of sites, preparation of soils, drainage, use of fertilizers, culture, etc., together with lists of vegetables that experience has shown are adapted to Alaskan conditions. The information is based upon experiments carried on during the past seven years at the several experiment stations and elsewhere" in Alaska.

ARKANSAS STATION, Fayetteville, W. G. Vincenheller, Director.

Rice Growing in Arkansas. By W. G. Vincenheller. (Bulletin No. 89, pp. 117-129, figs. 4.)

This is a brief account of experiments begun by the Arkansas Station in 1902 on a farm near Lonoke, and continued during 1903 to 1905 in cooperation with the Irrigation and Drainage Investigations of this Office. General suggestions are made regarding varieties, selection and preparation of soil, planting, flooding, weeds, harvesting, and threshing, and data are given for efficiency of centrifugal pumps for lifting irrigation water.

The Cattle Tick in Washington and Benton Counties. By W. G. Vincenheller. (Bulletin No. 90, pp. 129-141.)

This bulletin discusses the introduction of the cattle tick into these counties of Arkansas, its prevalence in the past and at the present time, detrimental effects on stock raising and agriculture, State and Federal quarantine regulations, plans and methods for tick eradication, and the need of a general law.

CALIFORNIA STATION, Berkeley, E. W. Hilgard, Director.

Why the Friends of Agricultural Progress Believe that Agriculture Should and Will be Taught in the Public Schools. By A. C. True. (Circular No. 17, pp. 14.)

This is a paper read at the joint session of the California Association and the State Farmers' Institute, held at the University of California, December 26-29, 1905.



COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

The Thorough Tillage System for the Plains of Colorado. By W. H. Olin. (Bulletin No. 103, pp. 32, figs. 7.)

This bulletin discusses the principles of semiarid farming, selection of seed for semiarid conditions, crops adapted to such conditions, the principle of capillarity in its relation to water conservation in the soil, experiments and experience in semiarid farming in other States, amount of moisture required by farm crops, and annual rainfall in Colorado.

A Rust-resisting Cantaloupe. By P. K. Blinn. (Bulletin No. 104, pp. 15, figs. 10.)

In this bulletin the cause, nature, and treatment of cantaloupe rust are briefly discussed, and two years' observations on a rust-resistant strain of the Rockyford variety are reported.

A New Apple Rot. By B. O. Longyear. (Bulletin No. 105, pp. 12, figs. 4.)

The history and distribution, general and microscopic characteristics, time and manner of infection, and methods of control of a disease due to a species of *Alternaria* which occurs on both apples and pears are discussed, as well as varieties affected and extent of injury.

Pruning Fruit Trees. By W. Paddock. (Bulletin No. 106, pp. 15, pls. 2, figs. 4.)

Practical directions are given.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

The Improvement of Corn in Connecticut. By E. M. East. (Bulletin No. 152, pp. 21, figs. 2.)

This bulletin explains in some detail the principles and methods of corn improvement as adapted to Connecticut conditions.

Report on Commercial Fertilizers, 1905. By E. H. Jenkins and A. L. Winton. (Annual Report, 1905, Part I, pp. 106.)

This is the usual account of fertilizer inspection for the year named, including also brief announcement regarding the work of the station and reports of the board of control and of the treasurer.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

The Marketing of Poultry Products. By F. H. Stoneburn. (Bulletin No. 38, pp. 28, figs. 8.)

The whole subject of how, when, and where to market all kinds of poultry products is discussed in detail.

Pig Feeding Experiments. By C. L. Beach and H. L. Garrigus. (Bulletin No. 39, pp. 29-39, figs. 4.)

This bulletin gives the daily gains and feed required for 100 pounds of gain and cost of gains for 10 lots of pigs fed from July 19, 1904, to April 17, 1905, skim milk and grain, each alone and in various combinations.

DELAWARE STATION, Newark, A. T. Neale, Director.

The K-L Emulsions and Spraying. By C. P. Close. (Bulletin No. 73, pp. 20.)

This bulletin discusses in detail the methods of preparing and applying these emulsions and reports results of experiments with different strengths of the preparation.

GEORGIA STATION, Experiment, R. J. Redding, Director.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 111-119.)

This includes the report of the board of control and of the director of the station summarizing briefly the work and expenditures during the year.

HAWAII STATION, Honolulu, J. G. Smith, Special Agent in Charge.

Citrus Fruits in Hawaii. By J. E. Higgins. (Bulletin No. 9, pp. 31, pls. 3, figs. 7.)

This bulletin deals with varieties, methods of culture, and marketing of oranges, lemons, pomelos, and limes under Hawaiian conditions.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Methods of Testing Variability in Corn. By E. Davenport. (Circular No. 101, pp. 7.)

The "array" method of comparison is described and illustrated by examples.

INDIANA STATION, Lafayette, A. Goss, Director.

Corn Improvement. By A. T. Wiancko. (Bulletin No. 110, pp. 77-120, figs. 14.)

This is a revised reprint of Bulletin 105 of the station.

IOWA STATION, Ames, C. F. Curtiss, Director.

Selecting and Preparing Seed Corn. By P. G. Holden. (Bulletin No. 77, revised, pp. 169-230, figs. 43.)

This bulletin in its present form has been revised and brought up to date.

KANSAS STATION, Manhattan, J. T. Willard, Director.

Steer Feeding Experiment, VII, 1903-4. By O. Erf et al. (Bulletin No. 130, pp. 7, figs. 2.)

This bulletin briefly reports experiments which were made to test the value of alfalfa alone and mixed with several other kinds of cheaper roughage, so that the cattle could select and eat at will whatever they desired.

Care of Dairy Utensils. By O. Erf and C. W. Melick. (Bulletin No. 131, pp. 9-20, figs. 8.)

The need of cleanliness in the care of dairy utensils is emphasized, and experiments to demonstrate the relative cleanliness of various methods of (1) flushing out the bowl of separators with water and (2) thoroughly washing are reported.

MAINE STATION, Orono, C. D. Woods, Director.

Fertilizer Inspection. By C. D. Woods and J. M. Bartlett. (Bulletin No. 120, pp. 153-168.)

"This bulletin contains the analyses of samples collected by the station of the brands of fertilizers licensed in 1905."

The Cottony Grass Scale. By Edith M. Patch. (Bulletin No. 121, pp. 169-189, pls. 2.)

"This bulletin contains a description of the cottony grass scale, together with its life history, natural enemies, remedial measures, and bibliography."

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. H. Chadwick. (Meteorological Bulletin No. 204, pp. 4.)

This is a summary for December, 1905.

Meteorological Observations. By J. E. Ostrander and C. H. Chadwick. (Meteorological Bulletin No. 205, pp. 4.)

This is a summary for January, 1906.

Index to Massachusetts Station Publications, Volumes 1-12, 1883-1894.  
(Index Number, 1905, pp. 44.)

This is a combined index of reports 1-12, 1883-1894, of this station.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

The San José Scale in Mississippi, and the Lime-salt-sulphur Wash.  
By G. W. Herrick. (Bulletin No. 90, pp. 15, figs. 5.)

This bulletin deals with the distribution of this insect in Mississippi, its characteristics, life history, means of distribution, plants liable to infestation, and methods of treatment, especially the lime-salt-sulphur treatment, for which detailed directions are given, based upon experiments in different parts of the State.

MISSOURI STATION, Mountain Grove, P. Evans, Director.

Commercial Fertilizers. By P. Evans. (Bulletin No. 13, pp. 23, fig. 1.)

In this bulletin an attempt is made to give "such information pertaining to the use of fertilizers as may be of use to the general inquirer. The information offered, however, does not come from the result of actual experiments conducted at this station, but rather is a general summary of the subject."

Preliminary Experiments in Dipping Nursery Stock. By F. W. Faurot.  
(Bulletin No. 14, pp. 7.)

An account is given of the results of dipping 75 fruit trees each in lime-sulphur-salt mixture and in formalin solution. Methods and implements for dipping are briefly described.

NEW HAMPSHIRE STATION, Durham, W. D. Gibbs, Director.

The Dairy Industry in New Hampshire. By I. C. Weld. (Bulletin No. 120, pp. 69-80, figs. 4.)

The history and present status of this industry in New Hampshire are briefly reviewed and the desirability of further development is urged.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Analyses and Valuations of Commercial Fertilizers. By J. P. Street, W. P. Allen, and V. J. Carberry. (Bulletin No. 188, pp. 46.)

This bulletin supplements Bulletin 187 of the station, giving results of fertilizer inspection during the year 1905.

Dried Beet Pulp as a Substitute for Corn Silage; Dried Beet Pulp versus Dried Molasses Beet Pulp; Dried Molasses Beet Pulp versus Hominy Meal. By G. A. Billings. (Bulletin No. 189, pp. 24, pl. 1.)

The results of experiments with milch cows to determine the effect of these feeding stuffs on the yield and quality of the milk, the cost of milk and butter, and upon the individual animals are reported.

Alfalfa. By G. A. Billings. (Bulletin No. 190, pp. 31, pls. 4.)

This bulletin discusses the value of alfalfa as a forage crop, its methods of culture and adaptability to New Jersey, as well as the economy of substituting alfalfa hay for various purchased foods in rations for dairy cows.

Seed Distribution of 1904 and for 1905. By B. D. Halsted. (Bulletin No. 191, pp. 19, pls. 4.)

This bulletin summarizes the results obtained from the distribution by the State to farmers, gardeners, and others of more than 1,000 packages of seeds of truck crops, including especially improved varieties of sweet corn, Lima beans, tomatoes, eggplants, and squashes.



NEW MEXICO STATION, Mesilla Park, L. Foster, Director.

Tuberculosis in Cattle and Tuberculin Tests of the Station Herd. By J. M. Scott. (Bulletin No. 55, pp. 20, pls. 5.)

This bulletin describes the nature and symptoms of tuberculosis and its means of transmission and distribution, explains the nature and use of tuberculin, and reports experiments in feeding the milk of tuberculous cows to calves and tests of tuberculin on the station herd. Precautions which should be taken to prevent spread of tuberculosis in the Territory are given.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

The Bronze Birch Borer: An Insect Destroying the White Birch. By M. V. Slingerland. (Bulletin No. 234, pp. 65-78, figs. 9.)

This bulletin deals with the characteristics, distribution, and destructiveness, food plants, life and habits, natural enemies, and remedial treatment of the bronze birch borer (*Agritus aurius*), which has recently proved very destructive in New York.

Cooperative Spraying Experiments. By M. V. Slingerland. (Bulletin No. 235, pp. 81-98, figs. 10.)

This is the first installment of reports of cooperative experiments carried on during the season of 1905 in different parts of New York, and includes accounts of experiments against the plum and the quince curculios, final demonstrations of efficiency of a poison spray for the grape-root worm, and making Bordeaux mixture with "new process" or prepared lime.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. XXIX + 437, pls. 2, figs. 204.)

This report contains brief summaries of the work of the year in the different departments of the station, as well as Bulletins 221-232, issued during the year.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Freezing of Fruit Trees. By F. H. Hall and H. J. Eustace. (Bulletin No. 269, popular ed., pp. 8.)

A popular edition of Bulletin 269.

Commercial Cultures for Legumes not Reliable. By F. H. Hall, H. A. Harding, and M. J. Prucha. (Bulletin No. 270, popular ed., pp. 10.)

A popular edition of Bulletin 270.

The Adaptability of Concentrated By-products for Poultry Feeding. By W. P. Wheeler. (Bulletin No. 271, pp. 385-403.)

This bulletin reports experiments with ducklings and chicks in which the effect of such concentrated by-products as meat meal, blood meal, bone meal, milk albumen, etc., on the growth and health of the fowls was studied.

Spraying for the San José Scale. By H. E. Hodgkiss, F. A. Sirrine, and E. L. Baker. (Bulletin No. 273, pp. 471-500, pls. 4.)

"This bulletin contains the results of the past year's experiments to determine the effects of a number of spray mixtures upon the San José scale and fruit trees. In this work various sulphur washes, the kerosene-lime mixture, and soluble oil sprays have been used. Applications of these have been made at intervals during the early spring, summer, and fall."

NORTH CAROLINA STATION, Raleigh, B. W. Kilgore, Director.

Spraying Mixtures and Machinery. When and How to Spray. By F. L. Stevens and R. S. Woglum. (Bulletin No. 193, pp. 33, figs. 8.)

This bulletin is a compilation of information as to what spray to use in combating the different insects and fungous troubles, and how to make and apply spraying mixtures. A card supplement to the bulletin gives a calendar and formulas for the more important spraying mixtures.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Paints and Paint Products. By E. F. Ladd and C. D. Holley. (Bulletin No. 67, pp. 575-604.)

In this bulletin the subject of paints in general and white pigments in particular is discussed, and analyses of a large number of paints and paint products, accompanied by the manufacturers' claims, are reported. This work is preliminary to the enforcement of a State law to prevent adulteration and deception in the sale of paints which went into effect January 1, 1906.

OHIO STATION, Wooster, C. E. Thorne, Director.

Meteorological Summary—Press Bulletins—Index. (Bulletin No. 163, pp. 259-283.)

This bulletin contains a meteorological summary for 1904, by C. A. Patton, the text of the press bulletins issued during the year ended June 30, 1905, and an index of all publications issued during that year.

Farmers' Institutes. (Circular No. 44, pp. 4.)

A list showing the members of the station staff who are prepared to assist at farmers' institutes and the topics which they will discuss.

Partial Statement of Tests Offered for 1906. (Circular No. 45, pp. 4.)

A partial statement of the tests which the station is prepared to make in co-operation with farmers in different parts of the State.

Proposed Constitution and By-laws of the Ohio Plant Breeders' Association. (Circular No. 46, pp. 4.)

Department of Cooperative Experiments. By L. H. Goddard and M. O. Bugby. (Circular No. 47, pp. 10.)

This is an account of this department of the station, which was organized to continue the work started by the Ohio Agricultural Students' Union, and of the experiments to which the department is now giving special attention.

Twenty-fourth Annual Report, 1905. (Annual Report, 1905, pp. XXV.)

A report of the director giving a summary account of work and expenditures of the station during the year.

OKLAHOMA STATION, Stillwater, J. Fields, Director.

Soil Inoculation. Tubercle-forming Bacteria of Legumes. By L. L. Lewis and J. F. Nicholson. (Bulletin No. 68, pp. 30, figs. 8.)

A popular summary of the investigations reported in detail in this bulletin has already been noted.

PENNSYLVANIA STATION, State College, H. P. Armsby, Director.

Methods of Steer Feeding. By T. I. Mairs and N. G. Miller. (Bulletin No. 74, pp. 8.)

An account is here given of a continuation during the winter of 1904-5 of feeding experiments with steers previously reported in Bulletins 64 and 68 of the station, the object of the later experiments being "to obtain further data on the relative economy of indoor and outdoor feeding for fattening steers in this climate."

Forage and Soiling Experiments, 1904. By G. C. Watson and T. I. Mairs. (Bulletin No. 75, pp. 12.)

An account is given of experiments during the season of 1904 to determine a practical succession of crops for soiling purposes, as well as the comparative value of the different crops when fed to milch cows. The crops experimented with were flat pea, peas and oats (3 sowings), peas and barley, clover silage, cowpeas and milo maize, black cowpeas, and Red Ripper cowpeas.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

A Comparison of Results Obtained by the Method of Cultures in Paraffined Wire Pots with Field Results on the Same Soil. By H. J. Wheeler, B. E. Brown, and J. C. Hogenson. (Bulletin No. 109, pp. 15-44, pls. 5.)

The work here reported was done in cooperation with the Bureau of Soils of this Department. It involved a comparison of the wire-basket method devised by the Bureau of Soils with field experiments as ordinarily conducted at the station.

Commercial Fertilizers. By H. J. Wheeler et al. (Bulletin No. 110, pp. 47-60.)

"This bulletin is supplementary to Bulletin No. 108, and the two contain the analyses of such commercial fertilizers as have been found on sale in Rhode Island during the year 1905."

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 169-352+VII, pls. 4.)

This contains reports of the director and of the heads of the different departments of the station giving summary accounts of the operations of the station during the year.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Methods of Spraying Cucumbers and Melons. By W. A. Orton and W. D. Garrison. (Bulletin No. 116, pp. 36, pls. 4, figs. 2.)

Experiments which were made by the South Carolina Experiment Station cooperating with the Bureau of Plant Industry of this Department to demonstrate the efficacy of Bordeaux mixture in controlling downy mildew of the cucumber on a farm near Charleston, S. C., are reported in detail.

A Comparison of Wheat Bran and Cotton-seed Meal for Milk Production. By J. Michels and J. M. Burgess. (Bulletin No. 117, pp. 18.)

An account is here given of experiments with 21 high-grade cows in early stages of lactation to study (1) the relative value of cotton-seed meal and wheat bran for milk production and (2) the influence of cotton-seed meal on the health of the animal.

TEXAS STATION, College Station, J. A. Craig, Director.

Experiments in Steer Feeding. By J. A. Craig and F. R. Marshall. (Bulletin No. 76, pp. 23, figs. 3.)

An account is given in this bulletin of experiments extending over two years, 1903 and 1904, to determine the value of various rations for fattening steers. The questions studied were the value of rice and molasses for steer feeding, rough feeds for use with cotton-seed meal, yearlings versus two-year-olds for fattening, and corn versus corn and cotton-seed meal for steers on pasture.

VIRGINIA STATION, Blacksburg, A. M. Soule, Director.

The Inoculation and Cultivation of Alfalfa. By A. M. Soule and M. Ferguson. (Bulletin No. 154, pp. 79-117, figs. 4.)

This bulletin discusses the history of alfalfa, its valuable qualities and adaptability to humid climates, types of land suited to the crop, methods of culture, its value as a feeding stuff and soil improver, and soil inoculation with special cultures, including accounts of tests of such cultures prepared and distributed by the experiment station.

Meteorological Data and Bloom Notes of Fruits. By H. L. Price. (Bulletin No. 155, pp. 119-142, figs. 4.)

In this bulletin the meteorological observations and bloom notes published in Bulletin 82 of the station are brought up to date and summarized in charts which are intended to set forth the climatal data in convenient form.



Gluten and Cotton-seed Meal with Silage, Hay, and Stover for Dairy Cows. By A. M. Soule and J. R. Fain. (Bulletin No. 156, pp. 30, figs. 15.)

Experiments with four groups of six cows each continuing from January 1 to April 30, 1905, to compare the relative merits of the concentrated and rough feeds named are reported.

Silage, Hay, and Stover in Beef Making. By A. M. Soule and J. R. Fain. (Bulletin No. 157, pp. 33-64, figs. 10.)

Experiments extending from November 17, 1904, to May 18, 1905, to compare the rough seeds named as well as linseed meal, cotton-seed meal, and corn-and-cob meal for winter feeding of beef cattle are reported.

Milk Fever: Its Causes, Symptoms, and Successful Treatment. By J. Spencer. (Bulletin No. 158, pp. 65-79, fig. 1.)

This bulletin discusses the causes and symptoms of this disease and describes the Schmidt potassium iodid method and the method of inflation with filtered air, giving results of the author's experience with these treatments.

Soil Inoculation with Artificial Cultures. By M. Ferguson. (Bulletin No. 159, pp. 81-96, figs. 3.)

This bulletin briefly reviews the history of investigation on this subject, including that of the Virginia Station begun in 1903, describes the author's methods of preparing and distributing the cultures, and gives results of 344 tests of the material in different parts of the State. The conditions under which inoculation is likely to succeed or to fail are stated.

Annual Report, 1905. (Annual Report, 1905, pp. 36, figs. 2.)

This consists of a series of brief reports by the director and heads of the different departments of the station summarizing the work of the year and the needs of the station.

WISCONSIN STATION, Madison, W. A. Henry, Director.

Licensed Commercial Feeding Stuffs, 1905. By F. W. Woll and G. A. Olson. (Bulletin No. 130, pp. 70.)

This bulletin gives the results of inspection of 61 brands of concentrated feeding stuffs collected in Wisconsin during the calendar year ended December 31, 1905, with a discussion of the results and a summary of results which have been accomplished since the establishment of the inspection of feeding stuffs in the State.

Official Tests of Dairy Cows, 1904-5. By F. W. Woll. (Bulletin No. 131, pp. 46, figs. 20.)

A summary is given in this bulletin of results of tests of the productive capacity of 356 cows of 7 breeds and grades during the year 1904-5.

Distribution of Tuberculosis in Suspected and Nonsuspected Herds in Wisconsin. By H. L. Russell and E. G. Hastings. (Bulletin No. 133, pp. 15, figs. 2.)

This bulletin describes the tuberculin test and shows the desirability of utilizing this means of preventing the continued spread of tuberculosis among farm stock.



# United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

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## LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING MARCH AND APRIL, 1906.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA CANEBRAKE STATION, Uniontown, J. M. Richeson, Assistant Director.

Experiments with Cotton and Corn in 1905. By J. F. Duggar and J. M. Richeson. (Bulletin No. 23, pp. 29.)

This bulletin gives the results of tests of varieties and experiments with various methods of fertilizing and cultivation on soils of different kinds.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

The Manufacture of Cane Sirup. By B. B. Ross. (Bulletin No. 133, pp. 143-168, figs. 2.)

This bulletin is designed to furnish fuller and more detailed information regarding methods of clarification and manufacture of sirups than has been given in previous bulletins of the station.

Corn Culture. By J. F. Duggar. (Bulletin No. 134, pp. 169-203, figs. 6.)

This bulletin summarizes the results obtained during the past 10 years in tests of varieties, seed from different latitudes and from different parts of the ear, and methods of culture and fertilizing.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 28.)

This report gives the organization and summary accounts of the expenditures of the station and of work in the different departments of the station during the year.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Sixteenth Annual Report, 1905. (Annual Report, 1905, pp. 26, figs. 3.)

Brief accounts are given of expenditures and of work in the different departments of the station during the year.

ARKANSAS STATION, Fayetteville, W. G. Vincenheller, Director.

Suggestions upon the Care of Apple Orchards. By E. Walker. (Bulletin No. 91, pp. 139-210, figs. 18.)

It is stated that this bulletin has been prepared to meet a growing demand from Arkansas growers for information regarding the better care of apple orchards, including cultivation, pruning, fertilizing, spraying, etc.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

Field Observations upon the Tolerance of the Sugar Beet for Alkali. By G. W. Shaw. (Bulletin No. 169, pp. 29, figs. 20.)

This bulletin summarizes the results of observations on this subject at Grand Junction, Colo., during 1900, and at Oxnard, Cal., during 1904.

Studies in Grasshopper Control. By J. S. Hunter. (Bulletin No. 170, pp. 23, figs. 17.)

An account is here given of results obtained in a successful effort to prevent grasshopper injury in certain sections of the San Joaquin Valley, with descriptions of the regions infested, the species causing damage, and the nature of the injuries and the methods of control employed.

Commercial Fertilizers. By G. Roberts. (Bulletin No. 171, pp. 29, figs. 3.)

The results of fertilizer inspection during the year ended June 30, 1905, are reported, including analyses of 151 samples of fertilizers and notes on valuation, mechanical condition of fertilizers, etc., and the text of the fertilizer law.

Further Experience in Asparagus Rust Control. By R. E. Smith. (Bulletin No. 172, pp. 21, figs. 7.)

This bulletin presents "new information in regard to asparagus rust treatment, obtained from the practical work of various growers during the past season, and from some special observations and experiments." It deals more particularly with the best methods of applying sulphur in the treatment of the rust.

Commercial Fertilizers. By G. Roberts. (Bulletin No. 173, pp. 26.)

This bulletin gives the results of fertilizer inspection during the six months ended December 31, 1905, including analyses of 138 samples of fertilizers and a list of brands of fertilizers and fertilizing materials offered for sale by the registered manufacturers and dealers in the State.

A New Wine-cooling Machine. By F. T. Bioletti. (Bulletin No. 174, pp. 27, figs. 6.)

The construction and operation of this cooler, which was originally devised for a series of wine-making experiments, are described, together with some of the preliminary tests made with small models before the full-sized machine was constructed.

Tomato Diseases in California. By R. E. Smith. (Bulletin No. 175, pp. 16, figs. 8.)

This is a preliminary report summarizing present knowledge on the cause, nature, and possible means of prevention of certain diseases which are causing considerable damage in the State, including damping-off, summer blight, and winter blight.

Sugar Beets in the San Joaquin Valley. By G. W. Shaw. (Bulletin No. 176, pp. 27, figs. 11.)

This bulletin gives the results of field observations in the San Joaquin Valley and analyses made in connection therewith since 1902, compiled in response to a renewed interest in the sugar-beet industry.

The Culture of the Sugar Beet. By G. W. Shaw. (Circular No. 13, pp. 21, figs. 3.)

"This circular is issued to meet a demand for somewhat detailed information upon the principles of sugar-beet culture as practiced in the most successful beet-

growing sections." It discusses adaptability of varieties, seed, soils, and methods of irrigation, cultivation, and harvesting.

### Practical Suggestions for Codling Moth Control in the Pajaro Valley.

By W. H. Volck. (Circular No. 14, pp. 11, fig. 1.)

This circular reports the results of a study of the injury to foliage by insecticides and gives detailed directions for application of arsenate of lead which "has been found reliable as an insecticide as well as neutral toward vegetation."

### Recent Problems in Agriculture. (Circular No. 15, pp. 4.)

That portion of a lecture by Prof. L. H. Bailey at the University of California summer session, August 4, 1905, which dealt with the question of the purposes of a university farm is here printed "as a contribution to a question of pressing public interest."

### Notes Concerning Seed Wheat. By G. W. Shaw. (Circular No. 16, pp. 8, figs. 2).

The work of other stations on this subject is summarized as an introduction to investigations which have recently been begun by the California Station in cooperation with this Department. The topics discussed in this circular are effect of change of seed, large *v.* small kernels for seed, large and plump *v.* small and shriveled seed, and prevention of smut, including descriptions of formaldehyde, copper sulphate, and hot-water methods.

### Caterpillars on Oaks. By C. W. Woodworth. (Circular No. 18, pp. 4).

Species of oak caterpillars which have done considerable damage to live oaks about the Bay region, namely, *Phryganidia californica* and *Malacosoma* spp., are described, with suggestions as to remedial measures.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

### The Gypsy Moth and the Brown-tail Moth. By W. E. Britton. (Bulletin No. 153, pp. 11, figs. 8.)

This is an emergency bulletin issued in view of the fact that it has recently been found that these moths have invaded Connecticut at Stonington. It discusses briefly life history and injury, means of distribution, natural enemies, importation of parasites, and remedial measures or methods of control.

### Tenth Report on Food Products. By E. H. Jenkins, et. al. (Annual Report, 1905, pt. 2, pp. 107-144.)

This report gives the results of examinations for adulteration of 260 samples of food products of various kinds collected during the year ended July 31, 1905.

### Commercial Feeding Stuffs. By E. H. Jenkins and A. L. Winton. (Annual Report, 1905, pt. 3, pp. 145-188.)

This report gives the results of chemical and microscopic examinations of 264 samples of feeding stuffs collected during the fall of 1905.

DELAWARE STATION, Newark, A. T. Neale, Director.

### Dust and Liquid Spraying. By C. P. Close. (Bulletin No. 72, pp. 23.)

The relative merits of these two methods of spraying are briefly discussed, methods of preparing the sprays are described, and comparative tests made on different kinds of fruits during 1905 are reported.

### Some Experiences with Insecticides for the San José Scale. By C. O. Houghton. (Bulletin No. 74, pp. 16.)

Supplementing previous bulletins of the station the author gives the results of experiments with a number of insecticides, including lime, sulphur, and salt washes, kerosene emulsion, and various proprietary articles.



FLORIDA STATION, Lake City, P. H. Rolfs, Director.

Pineapple Culture III. Fertilizer Experiments. By H. K. Miller and A. W. Blair. (Bulletin No. 83, pp. 405-437, pls. 7, dgm. 3.)

The object of the experiments reported in this bulletin was "to find out from what source or sources it is best to obtain fertilizing materials for pineapples; the proper quantity to use for the best results as regards, quantity, quality, and shipping properties; best method of applying, ratio of phosphoric acid, nitrogen, and potash; the effect of shading, and to determine any other conditions which will prove of advantage to the industry." The bulletin is supplementary to previous bulletins of the station.

GEORGIA STATION, Experiment, R. J. Redding, Director.

Corn Culture. By R. J. Redding. (Bulletin No. 69, pp. 41-60.)

The results of variety tests and experiments with methods of fertilizing and culture during 1905 are summarized.

Cotton Culture. By R. J. Redding. (Bulletin No. 70, pp. 61-90.)

This bulletin summarizes the results of variety tests and experiments with methods of fertilizing and culture during 1905.

Some Field Notes on Soil Inoculation. By H. N. Starnes. (Bulletin No. 71, pp. 91-105, pls. 12.)

This bulletin reports field tests to determine the extent to which artificial soil inoculation for the cowpea is of value for the average red clay lands of the cotton belt and a study of the development of root tubercles on leguminous plants through cross-inoculation.

IDAHO STATION, Moscow, H. T. French, Director.

Potato Scab. By L. F. Henderson. (Bulletin No. 52, pp. 8.)

An account is here given of experiments to determine the relative development of this disease on old and new ground and to test the efficiency of the corrosive sublimate, formaldehyde, and sulphur methods of treatment.

Experiments with Wheat and Oats for Smut. By L. F. Henderson. (Bulletin No. 53, pp. 15.)

Experiments to determine the relative efficiency of the formaldehyde, copper sulphate, and hot water methods for prevention of grain smut are reported.

ILLINOIS STATION, Urbana, E. Davenport, Director.

The Farmer's Vegetable Garden. By J. W. Lloyd. (Bulletin No. 105, pp. 151-205, pls. 4, figs. 8, dgm. 5.)

This bulletin gives the results which have been obtained during the past five years on a garden consisting of one-half acre of well-drained black prairie soil, which was maintained "to secure data regarding the cost of such a garden and the value of its products and to demonstrate the feasibility of securing a large assortment and continuous supply of vegetables throughout the year by a proper selection of varieties, timely planting, and judicious tillage."

Spraying Apples: Relative Merits of Liquid and Dust Applications. By C. S. Crandall. (Bulletin No. 106, pp. 205-242, figs. 15.)

The results of experiments commenced in 1903 in an orchard near Olney, Ill., are reported.



INDIANA STATION, Lafayette, A. Goss, Director.

Indiana Plant Diseases in 1905. By F. D. Kern. (Bulletin No. 111, pp. 121-134.)

This is a summary compiled chiefly from replies to a circular letter sent out by the station, and indicates the prevalence of the more important diseases of cultivated plants in the State, and estimates of the extent of injury as compared with the previous season.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 46.)

This is a summary of expenditures and of the work of the station in its different departments during the year ended June 30, 1905.

KANSAS STATION, Manhattan, J. T. Willard, Director.

Western Feeds for Beef Production. By J. G. Haney and O. H. Elling. (Bulletin No. 132, pp. 19-52, figs. 9.)

An account is here given of experiments at the Fort Hays substation, with 64 head of grade Shorthorn and Hereford steers to test the relative economy of various rations made up of corn-and-cob meal, Kafir corn, wheat, alfalfa hay, and sorghum hay.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 55.)

This is a summary of work and expenditures of the station in its different departments during the year ended June 30, 1905, with a catalogue of publications of the station from its organization to June 30, 1905.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Fourteenth Annual Report, 1901. (Annual Report, 1901, pp. xvi + 308, figs. 53.)

This includes a financial statement and brief summaries of the work in the different departments of the station, with the bulletins issued during the year.

Fifteenth Annual Report, 1902. (Annual Report, 1902, pp. xvi + 349, pls. 16.)

This includes a financial statement and brief summaries of the work in the different departments of the station, with the bulletins issued during the year.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 32, figs. 5.)

This is a summary account of the work and expenditures of the three stations during the year.

MAINE STATION, Orono, C. D. Woods, Director.

Experiments in Orchard Culture. By W. M. Munson. (Bulletin No. 122, pp. 179-204, pl. 1, figs. 5.)

"This bulletin contains the second report upon the progress of the special orchard experiments being conducted in Kennebec County, including culture and fertilization, orchard renovation, top-grafting, keeping quality as affected by culture, and cover crops."

Strawberry Crown Girdler. Insects of the Year. By Edith M. Patch. (Bulletin No. 123, pp. 203-228, pls. 4.)

"This bulletin contains notes upon the strawberry crown girdler with preventive and remedial measures, and insect notes for 1905."

Finances, Meteorology, Index. (Bulletin No. 124, pp. 227-268+VII.)

This bulletin contains a summary of meteorological observations, report of the treasurer, an index of Bulletins 112-124, issued during 1905, which constitute the report of the station for that year, and an index of reports for 1901 to 1905.

Seed Inspection. By C. D. Woods and Bessie G. Tower. (Bulletin No. 125, pp. 24.)

"This bulletin contains the text of the laws regulating the sale of seeds and analyses of samples of seeds collected by the station in 1905 and received from correspondents in 1902-1905."

Field Experiments in 1905. The Effect of the Ration on the Value of the Manure. By C. D. Woods and J. M. Bartlett. (Bulletin No. 126, pp. 25-48.)

"This bulletin contains an account of field experiments on the Clark method of growing grass for hay, soil inoculation for legumes, alfalfa, Sal Bordeaux for potato blight, fertilizer experiments with peas and potatoes, and an account of an experiment studying the effect of the ration fed on the value of the manure."

Fertilizer Inspection. By C. D. Woods and J. M. Bartlett. (Bulletin No. 127, pp. 47-64.)

This bulletin reports analyses of manufacturers' samples of brands of fertilizers licensed in Maine before February 1, 1906.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 206, pp. 4.)

This is a summary for February, 1906.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 207, pp. 4.)

A summary for March, 1906, is given.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

Insects of the Garden. By R. H. Pettit. (Bulletin No. 233, pp. 77, figs. 65.)

"The present bulletin is the second of a series dealing with the insects affecting different classes of crops. It deals with the insects now affecting garden and truck crops in Michigan and some which are sure to be found in the State sooner or later. Only insects of importance or of interest have been included."

Feeding Dairy Cows. By C. D. Smith. (Bulletin No. 234, pp. 81-109.)

A general discussion of this subject, being a review and partial reprint of Bulletin 149 of the station.

Corn Improvement. By J. A. Jeffery. (Special Bulletin No. 34, pp. 23, figs. 15.)

This is a compilation of information relating to selection, testing, preservation, and judging of seed corn.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 81-539, figs. 155.)

This report includes a financial statement, brief summaries of work of the year in the different departments of the station, a meteorological record for the year 1904, and bulletins of the station issued during the year ended June 30, 1905.

MINNESOTA STATION, St. Anthony Park, St. Paul, W. M. Liggett,  
Director.

A Brief Outline of Insect Conditions and Work of the Year 1905. The  
Diptera of Minnesota—Two-winged Flies Affecting the Farm, Gar-  
den, Stock, and Household. By F. L. Washburn. (Bulletin No.  
93, pp. 168, pls. 2, figs. 164.)

This bulletin gives a brief outline of insect conditions and the work during 1905 in  
Minnesota, introducing a monograph on the diptera or two-winged flies affecting  
the farm, garden, stock, and household in Minnesota. This monograph has also  
been published as the report of the State entomologist of Minnesota.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson,  
Director.

Report of Work at McNeill Branch Experiment Station for 1904. By  
E. B. Ferris. Bulletin No. 87, pp. 16.)

This contains brief statements regarding the character of the season and accounts  
of experiments with various crops.

Report of Field Work Done at the College Station for 1904. By W.  
R. Perkins. (Bulletin No. 88, pp. 13.)

Brief accounts are given of tests of varieties of cotton, corn, soy beans, Johnson  
grass, alfalfa, oats, and cowpeas.

Feeding Beef Cattle in Mississippi. By A. Smith and C. I. Bray.  
(Bulletin No. 92, pp. 24, figs. 9.)

An account is given of experiments with 25 grade steers designed "primarily to  
demonstrate that the feeding of beef cattle is profitable in this State and that good  
gains can be made under proper conditions of feeding and management."

Peach and Plum Culture. By A. B. McKay. (Bulletin No. 93, pp.  
16, figs. 2.)

The location, soil, cultivation, varieties planted, and results obtained in the peach  
and plum orchards of the station are described.

MISSOURI STATION, Columbia, H. J. Waters, Director.

Three Fungus Diseases of the Cultivated Ginseng. By H. S. Reed.  
(Bulletin No. 69, pp. 41-66, figs. 9.)

Popular and technical descriptions are given of stem anthracnose (*Vermicularia  
dematium*), leaf anthracnose (*Pestalozzia funerea*), and wilt disease (*Neocosmospora  
vasinfecta*). Methods of treatment are also described.

NEW HAMPSHIRE STATION, Durham, W. D. Gibbs, Director.

The Gypsy Moth in New Hampshire. By E. D. Sanderson. (Bulletin  
No. 121, pp. 81-104, figs. 20.)

This bulletin deals with the history of the introduction of this insect into the  
United States, its present distribution, especially in New Hampshire, life history,  
means of distribution, food plants and injury caused, natural enemies, and remedies.  
The necessity for immediate action with a view to suppressing the insect is pointed  
out.

The Brown-tail Moth in New Hampshire. By E. D. Sanderson. (Bul-  
letin No. 122, pp. 105-132, figs. 29.)

The spread and distribution, life history, means of distribution, food plants and  
injury, danger to health, natural enemies, and means and necessity of suppression of  
this insect are discussed.



The Inspection of Fertilizers in 1905. (Bulletin No. 123, pp. 133-144.)

The results of examinations of 105 brands of mixed fertilizers collected by the agents of the State Board of Agriculture and analyzed by the chemist of the experiment station are reported, with a brief general discussion on the use of commercial fertilizers.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Breeding Sweet Corn—Cooperative Tests. By B. D. Halsted. (Bulletin No. 192, pp. 30, pls. 4, figs. 8.)

An account is given in this bulletin of cooperative experiments made in different parts of New Jersey in cross breeding sweet corn.

Concentrated Feeding Stuffs. By J. P. Street, W. P. Allen, and V. J. Carberry. (Bulletin No. 193, pp. 38.)

This bulletin gives the results of examinations of 384 samples of feeding stuffs inspected during 1905.

Spraying. By G. F. Warren. (Bulletin No. 194, pp. 60.)

In this bulletin "the aim has been to summarize the methods of spraying that have been found most profitable in the past few years. Consideration has therefore been given not only to results obtained at this station but to the results of experiments at other stations and to the success that has come to farmers from using the different sprays."

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Fifteenth Annual Report, 1904. (Annual Report, 1904, pp. 48.)

This includes a report of the director, which reviews the work of the year in a general way and gives the present status of the institution as a whole. "Following this are the reports of the treasurer and of the heads of departments, briefly reviewing the investigations carried on under their direction and showing the present condition of the departments."

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

The Blight Canker of Apple Trees. By H. H. Whetzel. (Bulletin No. 236, pp. 99-138, figs. 36.)

The nature of this disease and of the injuries it causes is described, as well as the treatment which promises best results. Notes are also given on the morphology and cultural characters of the organism *Bacillus amylovorus*, which causes the disease. A bibliography of the subject is given.

Alfalfa. By J. L. Stone, J. W. Gilmore, and S. Fraser. (Bulletin No. 237, pp. 139-177, figs. 10.)

This bulletin supplements Bulletin 221 of the station, and records the results of tests of the adaptability of alfalfa to New York conditions by means of experiments on the college farm and cooperative experiments and observations throughout the State.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Report of Analyses of Samples of Fertilizers Collected by the Commissioner of Agriculture during 1905. (Bulletin No. 272, pp. 403-470.)

This bulletin gives in tabular form and without discussion of any kind the analyses of samples of fertilizers collected by the commissioner of agriculture during 1905 and transmitted by him for analysis to the director of the New York State Station.



Testing Spray Mixtures for San José Scale. By F. H. Hall et al. (Bulletin No. 273, popular ed., pp. 8.)

A popular edition of Bulletin 273.

Director's Report for 1905. By W. H. Jordan. (Bulletin No. 274, pp. 499-518.)

The operations of the station during the year are concisely summarized and a list of publications issued during 1905 is given.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Rust Problems. H. L. Bolley. (Bulletin No. 68, pp. 605-676, pls. 15, figs. 13.)

"The aim of this bulletin is to provide the people of the spring-wheat region of this country with a sort of compendium of the theories and known facts involved in the rusting of the cereals and other important farm crops; to give the lines and results of new observations and experiments and to cite investigations and farm practices which give most promise of future success in combating or preventing crop destruction by these fungus pests."

OHIO STATION, Wooster, C. E. Thorne, Director.

Fertility Studies on Wooster Soil. By A. H. Snyder and C. L. Cook. (Bulletin No. 167, pp. 85-119.)

An account is given in this bulletin of experiments made by the Bureau of Soils, cooperating with the Ohio Station, "to determine whether the results obtained by its wire-basket and aqueous-extract methods of studying the productiveness and manurial requirements of soils were in accord with those secured through plat experiments."

Fertility Studies on Strongsville Soil. By A. H. Snyder and C. L. Cook. (Bulletin No. 168, pp. 119-138.)

This bulletin gives an account of experiments made by the Bureau of Soils cooperating with the Ohio Station to determine whether the results obtained by the wire-basket method are in accord with those secured through plat experiments.

Spraying for the San José Scale. By J. S. Houser. (Bulletin No. 169, pp. 137-155, pls. 6.)

This bulletin is supplementary to Bulletin 144 of the station and gives the results of field tests of various sulphur sprays and other mixtures, fall and spring applications, methods of preparing and applying the sprays, etc. Descriptions are also given of various spraying outfits and practical recommendations are made.

Some Suggestions Relative to Alfalfa Growing in Ohio. By C. G. Williams. (Circular No. 49, pp. 3.)

This circular briefly summarizes the experience of the station to date in growing alfalfa.

A Yearly Program in Entomological Practice for the Orchard. By H. A. Gossard. (Circular No. 52, pp. 4.)

This program is designed "to suggest to the orchardist what enemies are most apt to cause him trouble, when to look for them, and what to do to forestall them."

Experiments with Corn. By C. G. Williams. (Circular No. 53, pp. 11, dgms. 2.)

"In this circular a brief report is given of tests of several varieties of corn conducted at this station during the last three years, recent tests conducted at the Germantown and Carpenter test farms, results of different rates of seeding, methods of conducting ear-row tests at the station and in our cooperative work, together with a few suggestions upon the selection of seed corn."

Fertilizers on Cereal Crops Grown in Rotation. By C. E. Thorne. (Circular No. 54, pp. 15.)

A summary is given of the results of twelve years' experiments at Wooster, eleven years' at Strongsville, and two years' at the two other test farms.

OKLAHOMA STATION, Stillwater, J. Fields, Director.

Hardy Bermuda Grass. By J. Fields. (Bulletin No. 70, pp. 8.)

The adaptability of Bermuda grass to Oklahoma conditions is discussed and methods of propagation are described.

Use of Artificial Impregnator in Horse Breeding. By L. L. Lewis and W. L. English. (Circular No. 5, pp. 8, figs. 6.)

The instruments and methods used are described and the results of experiments to determine the vitality of the sperm cells when kept at various temperatures are reported.

OREGON STATION, Corvallis, J. Withycombe, Director.

Canning Fruit and Vegetables. Preserving Fruit Juices. By E. F. Pernot. (Bulletin No. 87, pp. 14.)

A method of preservation, depending upon repeated heating to 165° F., is described.

San José Scale. By A. B. Cordley. (Bulletin No. 88, pp. 15, pl. 1, figs. 11.)

This bulletin gives a list of food plants of the San José scale and describes its characteristics and methods of treatment, the latter being based upon experiments carried out by the Oregon Station.

PENNSYLVANIA STATION, State College, H. P. Armsby, Director.

Variety Tests of Wheat, Oats, and Potatoes. By G. C. Watson and N. G. Miller. (Bulletin No. 76, pp. 13.)

The results of experiments which have been carried on at the station for a number of years are summarized.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Trial of Varieties of Potatoes. By G. E. Adams. (Bulletin No. 111, pp. 61-74.)

The results of tests of varieties and of spraying for late blight are reported.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

The Milk Scales, the Milk Sheet, and the Babcock Test for the Farmers of South Carolina. By B. H. Rawl. (Bulletin No. 95, pp. 17, figs. 10.)

It is the purpose of this bulletin to show how the dairy farmer with the above means and with but little expense "can keep track of his herd so that at the end of each month he can determine not only the profit or loss that he has realized from his herd, but the profit or loss that he has realized on each animal in the herd."

Notes on Varieties of Apples. By C. C. Newman. (Bulletin No. 109, pp. 38, pl. 1, figs. 30.)

This bulletin gives natural-size drawings and brief descriptions of some of the varieties of apples planted twelve years ago in the horticultural grounds of the station and which have been in bearing for the last seven years. Lists of varieties recommended for planting in the mountain, hill, and pine-belt regions of the State are given.

**A Wasting Disease of Young Cattle (Verminous Gastritis).** By L. A. Klein. (Bulletin No. 114, pp. 11.)

This bulletin discusses briefly the history and distribution, symptoms and time of appearance, appearance and location of the parasite, course of disease and animals affected, conditions favoring the disease, and treatment and prevention of this disease, with a list of references to literature on the subject.

**SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.**

**Alfalfa and Red Clover.** By J. W. Wilson and H. G. Skinner. (Bulletin No. 94, pp. 16, fig. 1.)

This bulletin gives the results of tests of these forage plants during the past three years at the station and at the substation at Highmore, as well as of the experience of practical farmers in different parts of the State.

**The Treatment of Nail Pricks of the Horse's Foot.** By E. L. Moore. (Bulletin No. 95, pp. 15-22.)

Detailed directions are given, with descriptions of a number of cases illustrating the method of procedure.

**VERMONT STATION, Burlington, J. L. Hills, Director.**

**Commercial Feeding Stuffs.** By J. L. Hills, C. H. Jones, and F. M. Hollister. (Bulletin No. 117, pp. 8.)

A brief summary is given of the results of inspection during the spring of 1905.

**Commercial Feeding Stuffs.** By J. L. Hills and C. H. Jones. (Bulletin No. 118, pp. 9-16.)

A brief summary is given of the results of inspection during the fall of 1905.

**Abstract of Eighteenth Annual Report, 1904-5.** By J. L. Hills. (Bulletin No. 119, pp. 17-64.)

See below.

**Planting White Pine in Vermont.** By L. R. Jones. (Bulletin No. 120, pp. 65-80, figs. 7.)

This bulletin summarizes the results of experiments and observations by the station, by New Hampshire foresters, and by the U. S. Forest Service.

**Commercial Fertilizers.** By J. L. Hills and C. H. Jones. (Bulletin No. 121, pp. 81-104.)

This bulletin gives results of analyses of 56 samples collected during the spring inspection of 1906.

**Disease Resistance of Potatoes.** By W. Stuart. (Bulletin No. 122, pp. 105-136, dgms. 6.)

An account is given in this bulletin of a continuation in cooperation with this Department of investigations previously reported in Bulletin 115 of the station.

**Spray Calendar.** (Special Bulletin, April, 1906, folio.)

**Eighteenth Annual Report, 1905.** (Annual Report, 1905, pp. 245-466, pls. 4, figs. 2.)

This report gives brief accounts of the work and expenditures of the station during the year, and abstracts of bulletins issued, and includes the following special articles: The Occurrence of Plant Diseases in Vermont in 1904, and Potato Diseases and Their Remedies, by L. R. Jones and W. J. Morse; Further Studies in Lettuce Culture, Soil Sterilization, On the Winter Injury of Apple Trees, Influence of Stock on Scion, Miscellaneous Fruit Notes, and Insects of the Year, by W. Stuart; Maple Sirup and Maple Sugar Investigations with Particular Reference to the Detection of Adulteration, by C. H. Jones; Miscellaneous Analyses, by C. H. Jones and F. M. Hollister; The Influence of Changes in Feeding upon Milk Production, Feeding Trials with Cows, A Comparison of Feeding Trial Methods, A Trial of the Hegelund or Danish Method of Milking, and Record of the Station Herd for 1904-5, by J. L. Hills.

WEST VIRGINIA STATION, Morgantown, J. H. Stewart, Director.

Commercial Fertilizers. By J. H. Stewart and B. H. Hite. (Bulletin No. 97, pp. ci-cvii + 108-170.)

This is a complete report of results of fertilizer inspection during 1905.

Experiments with Fertilizers. By J. H. Stewart and H. Atwood. (Bulletin No. 99, pp. 185-210, pls. 6.)

The results of six years' experiments on tenth-acre plats with various combinations of fertilizing materials are reported.

The Grape Curculio. By F. E. Brooks. (Bulletin No. 100, pp. 211-249, pls. 8.)

This is a report on a study made during 1905 on the distribution, life history, habits, extent of injury, and possible methods of prevention or control of the grape curculio (*Craponius inaequalis*).

Report on Nursery and Orchard Inspection, 1904-5. By W. E. Rumsey et al. (Report of Work under Chapter 33, Acts 1901, as amended by Chapter 49, Acts 1903, pp. iv + 5-60, pls. 7.)

This is an account of work done during the period named under provisions of an act of the State legislature passed in 1901.

WISCONSIN STATION, Madison, W. A. Henry, Director.

Licensed Commercial Fertilizers and Feeding Stuffs, 1906. By F. W. Woll and G. A. Olson. (Bulletin No. 134, pp. 30.)

This bulletin gives the results of analyses of fertilizers and feeding stuffs licensed for sale in the State during the year, with brief explanatory notes.













# United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

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## LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING MAY AND JUNE, 1906.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Cooperative Fertilizer Experiments with Cotton in 1901, 1902, 1903, and 1904. By J. F. Duggar. (Bulletin No. 131, pp. 17-74.)

The results of 10 experiments made in different parts of the State in 1901, 13 in 1902, 10 in 1903, and 21 in 1904 are summarized in this bulletin.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Alfilaria (*Erodium cicutarium*) as a Forage Plant in Arizona. By J. J. Thornber. (Bulletin No. 52, pp. 23-58, pl. 1, figs. 5.)

This bulletin discusses the introduction of alfilaria into Arizona, its botanical characters, factors favoring its growth, its adaptability to conditions in the Southwest, value as a forage and hay plant, and possibilities of general introduction. Chemical analyses of alfilaria hay are reported, methods of collection of alfilaria seed are described, and the experience of ranchmen with the plant is summarized.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

A New Method of Making Dry Red Wine. By F. T. Bioletti. (Bulletin No. 177, pp. 36, figs. 14.)

This bulletin reports a continuation of investigations previously noted in Bulletin 167 of the station and records tests on a large scale of the methods of making dry red wine outlined in that bulletin.

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

Peach Mildew. By O. B. Whipple. (Bulletin No. 107, pp. 7, figs. 2.)

This is a brief compilation of information regarding the nature of this disease and the means of combating it which have been used in other States.

Development of the Rockyford Cantaloupe Industry. By P. K. Blinn. (Bulletin No. 108, pp. 17.)

The early history and present status of this industry are reviewed, especial attention being given to methods of packing, shipping, and marketing.

**Cultural Methods for Sugar Beets.** By W. H. Olin. (Bulletin No. 109, pp. 12, figs. 3.)

The investigations of the Colorado Station relating to sugar-beets are noted, and descriptions are given of cultural methods used by successful sugar-beet growers in the State as compiled from replies to a circular of inquiry sent out during the crop season of 1905.

**Alfalfa.** By W. P. Headden. (Bulletin No. 110, pp. 16.)

This is a short summary of information on this subject intended to take the place of the more extended Bulletin No. 35 of the station and to bring the matter up to date.

**Alfalfa (A Synopsis of Bulletin No. 35).** By W. P. Headden. (Bulletin No. 111, pp. 12.)

It is intended that this synopsis will take the place of an index of Bulletin No. 35 of the station.

**A Hopperdozer.** By P. K. Blinn. (Bulletin No. 112, pp. 8, figs. 5.)

The construction of a home-made hopperdozer to be attached in rear of the mower in cutting alfalfa is described.

**Fourteenth Annual Report, 1901.** (Annual Report, 1901, pp. 53, pls. 9, dgm. 1.)

Summary accounts are given of the work and expenditures of the different departments of the station during the year.

**Eighteenth Annual Report, 1905.** (Annual Report, 1905, pp. 64.)

Summary accounts are given of the work and expenditures of the different departments of the station during the year.

**CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.**

**Fifth Report of the State Entomologist.** By W. E. Britton. (Annual Report, 1905, pt. 4, pp. xv + 189-262, pls. 12, figs. 7.)

An account is given of the work and expenditures of the State entomologist for the year 1905, the chief subjects of investigation reported on being scale insects, tobacco insects, mosquitoes, insects which pollinate fruit blossoms, the Connecticut insect fauna, insecticides, and general observations on injurious and beneficial insects.

**Report of the Station Botanist.** By G. P. Clinton. (Annual Report, 1905, pt. 5, pp. 263-330, pls. 13, figs. 2.)

This report is divided into three parts, as follows: (1) Notes on fungus diseases, etc., for 1905; (2) downy mildew (*Phytophthora phaseoli*) of Lima beans; and (3) downy mildew or blight (*P. infestans*) of potatoes.

**Conclusion.** (Annual Report, 1905, pt. 6, pp. 331-368 + viii, pls. 3, fig. 1.)

This part of the report contains an article on Tobacco Breeding Experiments in Connecticut, by A. D. Shamel, and an index, table of contents, etc., for the complete report.

**CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.**

**Creamery Problems.** By C. L. Beach. (Bulletin No. 40, pp. 38-47.)

This bulletin gives data regarding the use of separators and Cooley creamers and the efficiency of the two methods of removing cream, and discusses errors which may occur in connection with the Babcock test as well as the use of pure cultures in butter making.

**Spraying Notes, 1904-1905.** By E. R. Bennett. (Bulletin No. 41, pp. 48-65, figs. 8.)

An account is here given of experiments begun in the spring of 1904 to determine whether late blight and the consequent rotting of potatoes can be prevented by applications of Bordeaux mixture.

FLORIDA STATION, Lake City, P. H. Rolfs, Director.

A Preliminary Report on Growing Irish Potatoes. By C. M. Conner. (Bulletin No. 82, pp. 387-406, pls. 4.)

An account is given of experiments during the season of 1905 to determine the best sources and quantities of nitrogen, phosphoric acid, and potash, and of a complete fertilizer for potatoes, and to test the relative merits of different varieties for local conditions.

Pineapple Culture, IV.—Handling the Crop. By H. H. Hume. (Bulletin No. 84, pp. 439-457, pls. 5.)

This bulletin describes the construction of packing houses, the equipment required in the houses and in the field, and the improved methods of harvesting, grading, packing, shipping, and marketing pineapples.

Second Report on Pecan Culture. By H. H. Hume. (Bulletin No. 85, pp. 461-501, pls. 8, figs. 14.)

A somewhat detailed discussion of different features of pecan culture, embodying information previously published in Bulletins Nos. 54 and 57 of the station, with additional information collected since the issue of these bulletins.

Annual Report, 1903. (Annual Report, 1903, pp. 19.)

Brief reports by the director and by the heads of the different departments of the station.

Annual Report, 1904. (Annual Report, 1904, pp. 21.)

This contains brief reports by the director and by the heads of the different departments of the station.

Annual Report, 1905. (Annual Report, 1905, pp. 53.)

An administrative report giving a summary account of work and expenditures of the station during the year and including reports by the heads of the different departments of the station, that of the entomologist containing an account of insects observed during the year with methods of treatment, and that of the horticulturist giving accounts of observations on a number of plant diseases. A list of regular and press bulletins of the station since its organization is also included.

HAWAII STATION, Honolulu, J. G. Smith, Special Agent in Charge.

The Black Wattle (*Acacia decurrens*) in Hawaii. By J. G. Smith. (Bulletin No. 11, pp. 16, pls. 3.)

The topics discussed in this bulletin are cultivation, harvesting, effect of climate on tannin content, tan-bark extracts, tanning processes, utilization of the wood, and insect enemies.

The Mango in Hawaii. By J. E. Higgins. (Bulletin No. 12, pp. 32, pls. 10.)

This bulletin discusses the mango from a botanical standpoint, soil, climate, propagation, culture, handling, uses, diseases, insects, and varieties.

The Composition of Some Hawaiian Feeding Stuffs. By E. C. Shorey. (Bulletin No. 13, pp. 23.)

Analyses showing food and ash constituents of a considerable number of representative Hawaiian forage plants and concentrated feeding stuffs are reported in this bulletin and compared with similar materials produced elsewhere. The forms of nitrogen and deficiency of mineral constituents, particularly lime, in Hawaiian feeding stuffs are also discussed.

IDAHO STATION, Moscow, H. T. French, Director.

Annual Report, 1905. (Annual Report, 1905, pp. 48, charts 3.)

This report includes statement of receipts and expenditures, a summary by the director of the work of the year, and accounts of incomplete experiments in the botanical department for 1905, by L. F. Henderson; observations on blossoming of fruit trees, by L. B. Judson; an experiment with corn, by G. A. Crosthwait, and meteorological summary.



INDIANA STATION, Lafayette, A. Goss, Director.

Commercial Fertilizers. By A. Goss and W. J. Jones, jr. (Bulletin No. 112, pp. 135-208.)

This bulletin gives the text of the State fertilizer law, with explanations as to how the law is administered and terms used in fertilizer analyses, statistics of fertilizer sales in different sections of the State, and results of analyses of 308 samples of fertilizers collected during the spring of 1905 and 426 samples collected in the fall of 1905.

IOWA STATION, Ames, C. F. Curtiss, Director.

Spraying Calendar. By S. A. Beach and E. E. Little. (Bulletin No. 85, pp. 37-53, figs. 2.)

Treatments for insect and fungus enemies of apples, cherries, plums, peaches, grapes, strawberries, raspberries, blackberries, dewberries, potatoes, cucumbers, squashes, melons, cabbages, and plants in general are described, and directions for preparation of various spraying mixtures are given.

KANSAS STATION, Manhattan, J. T. Willard, Director.

Alfalfa Seed, Its Adulterants, Substitutes, and Impurities, and Their Detection. By H. F. Roberts and G. F. Freeman. (Bulletin No. 133, pp. 51-111, pls. 33.)

"The chief purpose and intent of this bulletin is to make as clear as possible the differences which exist to distinguish alfalfa seed from its most frequently used adulterants and substitutes."

The Alfalfa Seed Crop and Seeding Alfalfa. By A. M. Ten Eyck. (Bulletin No. 134, pp. 111-131.)

This bulletin, based largely upon replies to a circular letter sent to several hundred prominent alfalfa growers throughout the West, mainly in Kansas, discusses soil, weather, and other factors, effect of bees and other insects, which crop to save for seed, yield of seed, harvesting, stacking and threshing, storing and marketing seed, and methods of preparing the soil for alfalfa, and seeding and subsequent management.

Grading Cream. By O. Erf. (Bulletin No. 135, pp. 131-144.)

The importance of grading of cream in order to obtain butter of uniformly good quality is discussed and methods to be used are described.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Some Tree and Wood Infesting Insects. Cabbage Snakes. By H. Garman. (Bulletin No. 120, pp. 43-81, pls. 4, figs. 6.)

The tree and wood infesting insects treated in this bulletin are elm-leaf beetle (*Galerucella luteola*), bark louse (*Kermes pubescens*), walnut worm (*Datana integerima*), cottonwood-leaf beetle (*Lina scripta*), vagabond gall-louse (*Peniphigus vagabundus*), poplar leaf tyer (*Melalopha inclusa*), willow-leaf beetle (*Lina lapponica*), willow flea beetle (*Crepidodera helvines*), herald (*Scoliopteryx libatrix*), willow slug (*Pteronotus ventralis*), an undescribed willow Phytotoecidium, apple-tree measuring worm (*Ennomos subsignaria*), banded cask beetle (*Monarthrum fasciatum*), lesser cask beetle (*M. mali*), periodical cicada, and brown June-bugs. Various worms which have been referred to as cabbage snakes, especially hair worms of the genus *Merminis*, are described.

Analyses of Commercial Fertilizers. By M. A. Scovell et al. (Bulletin No. 121, pp. 83-153.)

The results of inspection of 421 samples of fertilizers examined up to August 16, 1905, are reported.

Corn. By W. H. Scherffius. (Bulletin No. 122, pp. 157-189, pls. 3.)

A method of field selection of seed corn is briefly described and chemical analyses of samples of a number of Kentucky varieties of corn are given, with descriptions of their physical characteristics.



**Analyses of Commercial Fertilizers.** By M. A. Scovell et al. (Bulletin No. 123, pp. 191-223.)

This bulletin gives the results of fertilizer inspection in 1905, including notes on the number of brands registered and samples collected during the year, a list of manufacturers registered in the State since August 16, and analyses with valuation of 302 samples of fertilizers.

**On the Adulterants and Weed Seeds in Kentucky Samples of Blue Grass, Orchard Grass, Timothy, Red Clover, and Alfalfa Seeds.** By H. Garman. (Bulletin No. 124, pp. 35, pls. 24.)

Descriptive notes are given of the seeds mentioned in the title of this bulletin, as well as of the adulterants commonly used, particular attention being given to the characteristics of each, and a detailed descriptive list of the weed seeds found in samples examined under the provisions of the Kentucky seed law of 1904 is appended. Many of the grass and weed seeds are illustrated.

**Observations and Experiments on Clover, Alfalfa, and Soy Beans.** By H. Garman. (Bulletin No. 125, pp. 37-61, pl. 1, fig. 1.)

An account of the station's culture experiments with these crops, including notes on the fungus diseases and insect enemies of clover and alfalfa.

**Soils.** By A. M. Peter and S. D. Averitt. (Bulletin No. 126, pp. 63-126.)

The topics treated in this bulletin are methods and uses of soil analysis, analyses of soils from different parts of the State, and the determination of humus in soils.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

**Blackleg.** By W. H. Dalrymple. (Bulletin No. 85, pp. 7.)

A brief compilation of information as to cause, symptoms, and treatment of this disease is given.

MAINE STATION, Orono, C. D. Woods, Director.

**Orchard Notes.** By W. M. Munson. (Bulletin No. 128, pp. 63-80, pls. 4.)

This bulletin contains notes on spraying for caterpillars, scale insects, apple scab, and pink rot; the results of an unbalanced fertilizer on fruit; observations on winter injury to trees from freezing and mice; and suggestions as to handling fruit and pruning.

**Feeding Stuff Inspection.** By C. D. Woods and J. M. Bartlett. (Bulletin No. 129, pp. 79-100.)

"This bulletin contains the analyses of samples of feeding stuffs received from correspondents and collected by the inspectors in the fall and winter, 1905-6, and a discussion of the results of the inspection."

**Twentieth Annual Report, 1904.** (Annual Report, 1904, pp. xii + 226, pls. 19, figs. 3.)

This report contains announcements, brief historical notes, and Bulletins 100-111 issued during the year.

**Twenty-first Annual Report, 1905.** (Annual Report, 1905, pp. VII + 268, pls. 7, dgms. 4.)

This report contains announcements, brief historical notes, and Bulletins 112-124 issued during the year.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Irish Potato Diseases. By J. B. S. Norton. (Bulletin No. 108, pp. 63-72, figs. 4.)

Information derived from the investigations of the Maryland Station and of other stations on potato scab, Rhizoctonia disease, dry rot, brown rot, early and late blight, tip burn, sun scald, etc., is summarized in this bulletin. Brief notes on the preparation and application of Bordeaux mixture and Paris green for these diseases are also given.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Analyses of Fertilizers. By C. A. Goessmann. (Bulletin No. 107, pp. 42.)

This includes analyses of licensed fertilizers inspected during 1905 and of miscellaneous fertilizing materials sent to the station for examination. A schedule of trade values of fertilizing materials during 1904 and 1905 is given.

Inspection of Concentrates. By J. B. Lindsey et al. (Bulletin No. 108, pp. 51.)

This bulletin gives the detailed results of the fall inspection, 1905, with remarks and suggestions relative to the character, quality, and usefulness of the various feeding stuffs examined.

Analyses of Fertilizers and Insecticides. By C. A. Goessmann. (Bulletin No. 109, pp. 23.)

Analyses of miscellaneous samples of fertilizing and insecticide materials are reported, with notes on sampling, instructions for the guidance of manufacturers and dealers in fertilizers, and a discussion of trade values of fertilizing materials for 1906.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 208, pp. 4.)

This contains a summary for April, 1906.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 209, pp. 4.)

This is a summary for May, 1906.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

Succotash as a Soiling Crop. By R. S. Shaw. (Bulletin No. 235, pp. 113-127, figs. 4.)

The results obtained with various mixtures of corn, peas, oats, barley, rape, millet, and clover grown to be fed green to dairy cows, calves, and hogs are reported.

Spraying for Potato Blight in 1905. By C. A. McCue. (Bulletin No. 236, pp. 129-143, figs. 2.)

The cause and prevention of potato blight and the profits which may be obtained by spraying are discussed upon the basis of demonstration experiments made at the station and on a farm at Otsego, and of experiments in other States.

Digester Tankage for Swine. By R. S. Shaw. (Bulletin No. 237, pp. 145-160.)

Three series of experiments to determine the value of digester tankage as a substitute for skim milk for young pigs from the time of weaning until they are capable of using less concentrated rations are reported in this bulletin.

Report of the South Haven Substation for 1905. By L. R. Taft and T. A. Farrand. (Special Bulletin No. 35, pp. 30.)

The results of tests of varieties, fertilizers, and cultural and spraying methods are reported.

MISSOURI STATION, Columbia, H. J. Waters, Director.

Analyses of Commercial Fertilizers. By P. Schweitzer and R. M. Bird. (Bulletin No. 66, pp. 8.)

This bulletin contains a report of analyses of commercial fertilizers collected during the fall of 1904 and spring of 1905, as well as a financial statement of the receipts and disbursements of the fertilizer control fund for the year ended December 31, 1904.

Supplements to Corn for Fattening Hogs. By E. B. Forbes. (Bulletin No. 67, pp. 19.)

A comparison of wheat middlings, linseed-oil meal, cotton-seed meal, gluten meal, gluten feed, and germ-oil meal as supplements to corn meal in dry-lot feeding of 15 lots of 6-months-old pigs during the months of December, January, February, and March, 1904-5, is reported.

Test of Tin Can Separators. Test of a Fly Repellant. By C. H. Eckles. (Bulletin No. 68, pp. 23-39, figs. 4.)

Forty-two trials of three different kinds of the double-can type of so-called cream separators are reported, as well as tests of the influence of a fly repellant on the milk and butter production of dairy cows.

Some Common Fungus Diseases and Their Treatment. By B. F. Floyd. (Circular of Information No. 21, pp. 12.)

This is a summary of information regarding the nature and treatment of apple scab (*Venturia pomi*), apple canker and black rot (*Sphaeropsis malorum*), pear blight, fire blight, or twig blight (*Bacillus amylovorus*), pear scab (*Fusicladium pirinum* and *Venturia pirinum*), brown rot (*Sclerotinia fructigena*), leaf spot or shot-hole fungus (*Cylindrosporium padi*), black knot (*Plowrightia morbosa*), leaf curl of peach (*Eroasculus deformans*), leaf spot or leaf blight of strawberry (*Sphaerella fragariae*), anthracnose of raspberry and blackberry (*Glauosporium venetum*), downy mildew of the grape (*Plasmopara viticola*), black rot of the grape (*Guignardia bidwellii*), leaf spot of tomato (*Septoria lycopersici*), leaf blight of beets (*Cercospora ceticola*), sterile-fungus, rot of the beet (species of *Rhizoctonia*), leaf blight of celery (*Cercospora apii*), bean rust (*Uromyces appendiculatus*), orange rust of blackberries, dewberries, and raspberries (*Gymnoconia interstitialis*), asparagus rust (*Puccinia asparagi*), carnation rust (*Uromyces caryophyllinus*), chrysanthemum rust (*Puccinia chrysanthemi*), and bean anthracnose (*Colletotrichum lindemuthianum*).

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Native Economic Plants of Montana. By J. W. Blankinship. (Bulletin No. 56, pp. 38.)

"The object of this paper is to enumerate, as far as possible, the native plants of the State utilized by the Indians, the early explorers, trappers, and settlers, as well as to mention the chief species now employed in our own industrial life."

Pig Feeding Experiments. By F. B. Linfield. (Bulletin No. 57, pp. 39-56.)

This bulletin reports 4 experiments, the object of which was to study the effect and value of various supplementary feeds, skim milk, sugar beets, clover, or alfalfa, when used with grain as compared with grain alone for fattening hogs.

Steer Feeding Experiments. By F. B. Linfield. (Bulletin No. 58, pp. 57-82.)

Two series of experiments are reported, one to test the feeding value of the different kinds of grain and combinations of grain which are available to the Montana farmer, and the other to determine the best amount of grain to feed with forage crops, such as clover and alfalfa.



Sheep Feeding Experiments for 1903-4 and 1904-5. By F. B. Linfield. (Bulletin No. 59, pp. 83-116.)

These experiments were a continuation of those of the previous year and were designed to determine "the general facts in regard to the value of clover as a sheep feed and the gains that might be made upon our range flocks during the feeding period in the winter. It was also desired to find the feeding value of the different kinds of grains and mixtures of grains available to the Montana farmer."

Onion Growing in Montana. By R. W. Fisher. (Bulletin No. 60, pp. 117-130.)

This bulletin gives the results of three years' experiments with onions at the station, discussing the construction of hotbeds, methods of transplanting and seeding, and varieties.

NEW HAMPSHIRE STATION, Durham, W. D. Gibbs, Director.

The Inspection of Feeding Stuffs in 1905. By F. W. Morse. (Bulletin No. 124, pp. 145-152.)

The results of inspection of 84 samples of feeding stuffs are reported.

Vegetable Novelties. By F. W. Rane and H. F. Hall. (Bulletin No. 125, pp. 153-180, figs. 27.)

This bulletin gives a summary of data obtained by the station in several years' systematic tests of vegetable novelties introduced by seedsmen.

The Care of Composite Milk Samples. By I. C. Weld. (Bulletin No. 126, pp. 181-184, figs. 5.)

Detailed directions as to the taking and preserving of composite samples of milk and cream are given.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Annual Report, 1905. (Annual Report, 1905, pp. XIX+689, pls. 63, figs. 43, dgms. 2.)

This contains summary accounts of work and expenditures of the station during the year and detailed reports of the chemists, soil chemist and bacteriologist, horticulturist, assistant horticulturist, dairy husbandman, biologist, botanist, and entomologist, the more important topics treated being fertilizer and feeding stuffs investigation, condimental feeds and condition powders, investigations relating to nitrogenous fertilizers, investigations relating to soil fertility and soil bacteriology, experiments with orchard and small fruits, feeding experiments with dairy cows and experiments in growing forage crops, egg production of fowls, studies in oyster propagation, experiments with varieties and crosses of various vegetables, weeds and ornamental plants, relation of fungi to weather conditions, investigations with reference to various insects and insecticides, and report on mosquito investigation in 1905.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Fourteenth Annual Report, 1903. (Annual Report, 1903, pp. 30.)

A financial statement and summary accounts of work in the different departments of the station are given in this report.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

Buckwheat. By J. L. Stone. (Bulletin No. 238, pp. 179-193, figs. 5.)

This is "a popular account of buckwheat, suggesting the best methods for its treatment in New York."

Some Diseases of Beans. By H. H. Whetzel. (Bulletin No. 239, pp. 195-214, figs. 16.)

The nature and treatment of anthracnose, blight, and rust of beans are discussed, and a brief note on apparatus adapted to spraying beans is given.



NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

**Apple Districts of New York with Varieties for Each.** By U. P. Hedrick, N. O. Booth, and O. M. Taylor. (Bulletin No. 275, pp. 61, map 1.)

"It is the purpose of this bulletin: First, to catalogue the apples that are grown or have originated in New York. Second, to describe briefly the sorts listed. Third, to define the several distinct horticultural belts in the State and to name the varieties of apples that can be most successfully grown in each."

**Varieties of Strawberries and Cultural Directions.** By O. M. Taylor. (Bulletin No. 276, pp. 63-80.)

"In this bulletin are described many of the newer varieties of strawberries, together with a few standard kinds for comparison. These descriptions are followed by brief cultural directions which answer in a measure the many inquiries coming to this station in regard to growing the crop."

**Strawberries.** By O. M. Taylor. (Bulletin No. 276, popular ed., pp. 8.)

A popular edition of the above bulletin.

**The Bang Method of Controlling Tuberculosis, with an Illustration of its Application.** By H. A. Harding, G. A. Smith, and V. A. Moore. (Bulletin No. 277, pp. 79-109.)

An account is here given of the conditions encountered and means employed to eradicate tuberculosis from the station herd by means of the Bang method.

**A Healthy Herd from a Tuberculous Herd.** By F. H. Hall et al. (Bulletin No. 277, popular ed., pp. 8.)

A popular edition of the above bulletin.

**Varieties of Raspberries and Blackberries, with Cultural Directions.** By O. M. Taylor. (Bulletin No. 278, pp. 111-151.)

Varieties which have been tested on the station grounds during the past 8 years are described and their relative merits discussed.

**Raspberries and Blackberries.** By O. M. Taylor. (Bulletin No. 278, popular ed., pp. 12.)

A popular edition of the above bulletin.

**Potato Spraying Experiments in 1905.** By F. C. Stewart, H. J. Eustace, and F. A. Sirrine. (Bulletin No. 279, pp. 153-229, pls. 6.)

The fourth year (including 70 separate experiments) of a ten-year series of potato spraying experiments is here reported.

**Good Results from Spraying Potatoes.** By F. H. Hall et al. (Bulletin No. 279, popular ed., pp. 16.)

A popular edition of the above bulletin.

**The Apples of New York, Volume II.** By S. A. Beach, N. O. Booth, and O. M. Taylor. (Annual Report, 1903, pt. 2, pp. iv+360, pls. 84.)

A large number of varieties are described and many of them illustrated.

**Twenty-third Annual Report, 1904.** (Annual Report, 1904, pp. 457, pls. 17, charts 4.)

This includes reports of the treasurer, director, and other officers of the station, and the following special articles: The proportion of animal food in the ration for ducklings, a swelling of canned peas accompanied by a malodorous decomposition, vitality of the cabbage black-rot germ on cabbage seed, chemical changes in the souring of milk and their relations to cottage cheese, the nature of the principal phosphorus compound in wheat bran, the composition of commercial whale-oil soaps with reference to spraying, a study of the composition of home-made cider vinegar, the lime-sulphur-soda wash for orchard treatment, fall spraying with sulphur washes,

the pear psylla, an experiment in shading strawberries, New York apples in storage, specific gravity as a factor in seed selection, analyses of commercial fertilizers during 1903 and 1904, inspection of feeding stuffs, periodicals received during 1904, and meteorological data for 1904.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Sixteenth Annual Report, 1905. (Annual Report, 1905, pp. 55, pls. 5.)

Summary accounts are given of the work in the different departments of the station during the year.

OHIO STATION, Wooster, C. E. Thorne, Director.

Peaches for Home and Market. By W. J. Green and F. H. Ballou. (Bulletin No. 170, pp. 155-186, figs. 35.)

This bulletin gives a short list of varieties which do fairly well at the station and summarizes information regarding soil and location suitable for culture, the planting, pruning, and culture of the trees, and spraying for insects and fungi.

Experiments with Fertilizers on Tobacco. By C. E. Thorne. (Bulletin No. 172, pp. 215-230, dgms. 2.)

An account is here given of a continuation during 1905 of experiments previously reported in Bulletin 161 of the station.

Ohio Agricultural Experiment Station. (Circular No. 48, pp. 3.)

This is a plea for additional funds to extend the work of the station.

The Forestry Work of the Ohio Experiment Station. By W. J. Green and C. W. Waid. (Circular No. 50, pp. 11, figs. 5, map 1.)

This circular discusses the possibilities of farm forestry in the State and explains briefly the work of the station in this line.

How to Prune Young Locust and Catalpa Trees. By W. J. Green and C. W. Waid. (Circular No. 51, pp. 6, figs. 3.)

Methods of pruning to secure straight trunks are described.

PENNSYLVANIA STATION, State College, H. P. Armsby, Director.

Small Fruits in 1905. By J. P. Pillsbury. (Bulletin No. 77, pp. 10.)

Brief notes are here given on varieties of strawberries, raspberries, blackberries, dewberries, currants, and gooseberries tested during the year.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Cotton Experiments. By C. L. Newman. (Bulletin No. 120, pp. 19.)

This is a summary of data regarding fertilizers and varieties compiled from the record books of the station.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Forage Plants and Cereals at Highmore Substation, 1904-5. By W. A. Wheeler, J. S. Cole, and S. Balz. (Bulletin No. 96, pp. 21-60, figs. 4.)

The soil and climatic conditions at this substation are briefly discussed and experiments with the following forage plants and cereals are reported: Alfalfa, red clover, millets, grasses, corn, sorghums, durum wheat, common bread wheats, barley, oats, emmer or spelt, and winter grains. Observations on the effects of the immediately preceding crop on the yield of grain in an unfavorable season, and comparative tests of heavy and light seed wheat are also reported.

Spelt and Millet for the Production of Baby Beef. By J. W. Wilson and H. G. Skinner. (Bulletin No. 97, pp. 59-74, figs. 8.)

The subjects of investigation reported in this bulletin are: "(1) The relative value of spelt, oats, millet, and corn as a growing ration for calves raised on separator milk; (2) the relative value of these grains for yearlings while on pasture; (3) the practicability of fattening yearlings for the production of baby beef."

WASHINGTON STATION, Pullman, E. A. Bryan, Director.

Feeding Wild Plants to Sheep. By S. B. Nelson. (Bulletin No. 73, pp. 64, figs. 40.)

An illustrative descriptive list is given of the wild forage plants found in the State, and notes are given on the results obtained in feeding these plants to sheep with a view of determining those which possessed toxic properties.

Apple Scab in Eastern Washington. By W. H. Lawrence. (Bulletin No. 75, pp. 14.)

Notes are given on the structure and life history of the fungus that causes apple scab, and the results of experiments made to test the efficacy of liquid and dust Bordeaux mixtures in controlling this disease are reported.

The Economical Preparation of the Sulphur-Lime Spray. By R. W. Thatcher. (Bulletin No. 76, pp. 16.)

This bulletin gives the results of a chemical study of the insecticidal constituents of the lime-sulphur-salt wash. The purpose of these investigations was to determine the most effective and, at the same time, most economical formula.

WEST VIRGINIA STATION, Morgantown, J. H. Stewart, Director.

The Ripe Rot or Mummy Disease of Guavas. By J. L. Sheldon. (Bulletin No. 104, pp. 297-315, pls. 4, fig. 1.)

The importance and distribution of this disease, the appearance of infected fruit, and the history and general character of the disease are discussed, and studies of the life history of the fungus *Glomerella psidii* are reported.

Tubercles on Legumes with and without Cultures. By J. L. Sheldon. (Bulletin No. 105, pp. 317-334.)

The results of field and greenhouse experiments with a large number of leguminous plants, grown with and without artificial inoculation at the station in 1904 and 1905, are reported in this bulletin.

WISCONSIN STATION, Madison, W. A. Henry, Director.

Spraying Potatoes for Prevention of Leaf Blight and Rot. By E. P. Sandsten and J. G. Milward. (Bulletin No. 135, pp. 24, figs. 7.)

The results of spraying experiments with Bordeaux mixture carried on for 2 years near Waupaca and Colfax are reported, with a discussion of the efficiency and profits of spraying to control potato diseases.

WYOMING STATION, Laramie, B. C. Buffum, Director

Fifteenth Annual Report, 1905. (Annual Report, 1905, pp. 77.)

This report contains summary statements regarding the organization, expenditures, and work of the station during the year, with brief articles on the following subjects: Stock-feeding experiments, digestion experiments, breeding experiments, poultry experiments, live-stock acquisitions, summary of lamb feeding 1904-5, summary of swine-feeding experiments 1904-5, forage-plant investigations, digestion experiments with forage plants, alkali studies, and tables for use in nitrogen and protein determinations.





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LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF  
EXPERIMENT STATIONS DURING JULY  
AND AUGUST, 1906.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Diseases of Sweet Potatoes in Alabama. By E. M. Wilcox. (Bulletin No. 135, pp. 16, figs. 4.)

This bulletin summarizes present knowledge of sweet-potato diseases and is issued as a preliminary report of investigations on the best methods of storing sweet potatoes to prevent the spread of disease.

Index, Vol. XII, Bulletins 127–129 and Seventeenth Annual Report, January to December, 1904. (Index, Vol. XII, pp. 105–112.)

Index, Vol. XIII, Bulletins 130–134 and Eighteenth Annual Report, January to December, 1905. List of Available Bulletins, May, 1906. (Index, Vol. XIII, pp. 205–214.)

ARKANSAS STATION, Fayetteville, W. G. Vincenheller, Director.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 69–210, figs. 23.)

This contains the director's report, a financial statement to June 30, 1906, and the following articles: Food adulteration in Arkansas, rice growing in Arkansas, the cattle tick in Washington and Benton counties, and suggestions upon the care of apple orchards.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

Mosquito Control Work in California. By H. J. Quayle. (Bulletin No. 178, pp. 55, figs. 33, maps 2.)

An account of a systematic effort in 1905 by the station to control the mosquito pest in the vicinity of Burlingame, California, by means of ditching, draining, spraying, etc. Notes are also given on the history and biology of the species found in this campaign, and a table giving a list of all the species of Culicidæ found in California is appended.

Reading Courses in Irrigation. By E. Mead. (Circular No. 20, pp. 7.)

An outline of reading courses on irrigation institutions and irrigation practice offered by the California Station.

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

Larkspur and Other Poisonous Plants. By G. H. Glover. (Bulletin No. 113, pp. 24, pls. 8.)

"This bulletin is issued with the view of placing before the farmers and stockmen of the State a plain and concise statement, with illustrations, regarding larkspur and a few of our most common and most to be dreaded range plants."

Insects and Insecticides. By C. P. Gillette. (Bulletin No. 114, pp. 46, pls. 4, figs. 18.)

This bulletin is practically a revised and enlarged edition of Bulletin No. 71 of the station, and gives "information in regard to the common insect pests and the remedies that are commonly used for their destruction or prevention." Methods of preparing and using various insecticides are also included.

Fertilizer Experiments with Sugar Beets. By A. H. Danielson. (Bulletin No. 115, pp. 23.)

Experiments conducted during the three years 1903 to 1905, "to test the effect of fertilizers on the yield and quality of sugar beets and determine the effect from the different fertilizers used, under field conditions, and incidentally a number of other questions," are reported in this bulletin.

The Cottony Maple Scale. By S. A. Johnson. (Bulletin No. 116, pp. 16, figs. 4.)

The purpose of this bulletin is to gather together the important points of economic literature and the results of experiments and observations made at this station, so that widely scattered information on the cottony maple scale may be made immediately available.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

Quality of Milk Affected by Common Dairy Practices. By W. A. Stocking, jr. (Bulletin No. 42, pp. 62-90, figs. 2, dgms. 8.)

The results of experiments made to ascertain the actual effect of some of the common dairy practices upon the germ content of milk are reported in this bulletin.

DELAWARE STATION, Newark, A. T. Neale, Director.

Petroleum Emulsions. By C. L. Penny. (Bulletin No. 75, pp. 39.)

This bulletin describes various methods of making petroleum emulsions without guaranty of their efficiency as insecticides.

GEORGIA STATION, Experiment, R. J. Redding, Director.

The Peach Tree Borer. By H. N. Starnes. (Bulletin No. 73, pp. 145-192, figs. 12.)

This bulletin gives a description and life history of this insect and the results of observations made in Georgia in the years 1904-1906. Remedial measures are suggested, special emphasis being laid on the "smothering test," which is said to be "a process presenting some promise for the future." An extensive bibliography is included.

IDAHO STATION, Moscow, H. T. French, Director.

Picking, Packing, and Marketing the Apple. By L. B. Judson. (Bulletin No. 54, pp. 37, pls. 17.)

In addition to a detailed and illustrative account of the best methods of picking and packing apples, this bulletin gives under the topic "marketing" the results of cooperation as accomplished by the Hood River Fruit Growers' Union of Oregon. Three appendixes are included. Appendix 1 is a circular distributed among members of the union giving advice to growers and instructions to packers; appendix 2 gives extracts from the Canadian Fruit Marks Act, 1901; and appendix 3 contains the articles of incorporation and by-laws of the above-named union.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Comparative Experiments with Various Insecticides for the San José Scale. By S. A. Forbes. (Bulletin No. 107, pp. 241-261.)

In this bulletin the results of experiments made in January and March, 1905, with 27 different kinds and forms of insecticides are reported. The effectiveness of the washes was determined by careful estimate of the degree of infestation before spraying, on the last of May, and early in September.

Spraying Apples for the Plum Curculio. By S. A. Forbes. (Bulletin No. 108, pp. 263-286, figs. 7.)

This bulletin reports the results of experiments undertaken in 1904 in spraying varieties of apples with arsenate of lead as a means of protection against the plum curculio. Notes are also given on poison tests of sprayed apples.

The Location, Construction, and Operation of Hog Houses. By W. Dietrich. (Bulletin No. 109, pp. 285-302, figs. 7.)

This bulletin gives "a general discussion of the location and construction of hog houses and a detailed description and method of operation of a hog house that has recently been planned and built at the Illinois Experiment Station."

Testing Individual Cows. By H. A. Hopper. (Circular No. 102, pp. 40.)

"The object of this circular is to show the importance of studying the production of each cow in the herd, if the owner is to realize the most from his efforts." The records were taken from herds maintained under conditions prevailing upon dairy farms of the State, including a wide range of production and varying conditions of environment.

Story of Rose and Queen. By W. J. Fraser. (Circular No. 103, pp. 4, figs. 2.)

Notes are given in this circular on the milk and butter-fat yields of 2 cows for a number of years as typical of the profitable and unprofitable classes of Illinois dairy cows.

INDIANA STATION, Lafayette, A. Goss, Director.

Characteristics of Some of the Contagious and Infectious Stock Diseases. By A. W. Bitting and G. H. Roberts. (Bulletin No. 113, pp. 209-288, figs. 20.)

An outline is given in this bulletin of the principal contagious diseases of animals, of a few of those with which they may be confounded, and of methods of treatment. There are included the State live stock sanitary law, the State and Federal regulations regarding the disposal of diseased animals, and the veterinary medical law of Indiana.

Winter Wheat. By A. T. Wiancko and M. L. Fisher. (Bulletin No. 114, pp. 289-308.)

The results of tests with 68 varieties of winter wheat grown at the station since 1900 are reported, including notes on the culture of winter wheat in Indiana.

KANSAS STATION, Manhattan, J. T. Willard, Director.

Press Bulletins Nos. 125-151. (Bulletin No. 136, pp. 143-206, fig. 1.)

This is the fourth collection of press bulletins issued by the station.

MARYLAND STATION, College Park, H. J. Patterson, Director.

The Mosquito. By T. B. Symons, T. H. Coffin, and A. B. Gahan. (Bulletin No. 109, pp. 71-124, pls. 9, figs. 18.)

This bulletin contains historical and biological notes of mosquitoes, with descriptions of 22 distinct species found in Maryland in 1905 besides others found in New Jersey and New York, and a discussion of mosquito control. Many of the species are illustrated.



MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Market Milk. By J. B. Lindsey and P. H. Smith. (Bulletin No. 110, pp. 48, figs. 3.)

The topics discussed in this bulletin are: Character, composition, and food value of milk; the common method of producing market milk; the chemical and bacteriological composition of market milk; and suggestions for the improvement of market milk.

Analyses of Fertilizers. By C. A. Goessmann. (Bulletin No. 111, pp. 28.)

This bulletin gives analyses of manurial substances and licensed fertilizers sent in to the station and collected in the general markets during 1906, together with the trade values of fertilizing ingredients in raw materials and chemicals.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 210, pp. 4.)

This is a summary for June, 1906.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 211, pp. 4.)

This is a summary for July, 1906.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 254.)

This contains a report by the director including a list of station bulletins and reports available for distribution, a statement by the treasurer, and reports by the heads of departments which include articles on the following subjects: Comparison of manures furnishing nitrogen, potash, and phosphorus, manure alone *v.* manure and potash, experiments in the application of manure, experiment in manuring grass land, nitrate of soda for rowen, fertilizers for garden crops, alfalfa, poultry experiments, pruning peach trees, report on official inspection of commercial fertilizers, agricultural chemicals, and foods and feeding stuffs during the season of 1905, and experiments in animal nutrition. An appendix gives compiled analyses of agricultural chemicals, etc., of fruits, garden crops, and insecticides, and of fodder articles and dairy products from 1868 to 1905; and tabular data on the coefficients of digestibility of American feeding stuffs to December 31, 1905.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

First Annual Report of Grade Dairy Herd. By R. S. Shaw and A. C. Anderson. (Bulletin No. 238, pp. 163-176, pl. 1, figs. 4.)

The milk and butter product, the food consumption, the profit or loss, and other data of the station dairy herd of 20 cows are reported for the year 1905.

MINNESOTA STATION, St. Anthony Park, St. Paul, W. M. Liggett, Director.

Soil Investigations. By H. Snyder. (Bulletin No. 94, pp. 163-194.)

This bulletin reports the results of cooperative fertilizer tests with wheat and corn between the station and various farmers throughout the State. Analyses of a number of typical farm soils made at intervals of 10 years to show the loss of nitrogen as a result of crop production are also reported.

Some Common Weeds and Their Eradication. By A. D. Wilson. (Bulletin No. 95, pp. 193-239, figs. 25.)

This bulletin is a simple statement of facts about weeds and is of practical value to the farmer seeking information regarding the best methods of eradicating the more common weeds of Minnesota. Many of the plants and their seeds are illustrated.

MISSOURI STATION, Columbia, H. J. Waters, Director.

Analyses of Commercial Fertilizers. By P. Schweitzer and R. M. Bird. (Bulletin No. 70, pp. 11.)

This bulletin contains analyses of commercial fertilizers collected during the fall of 1905, and a financial statement of the receipts and disbursements of the fertilizer control fund for the year ended December 31, 1905.



MISSOURI FRUIT STATION, Mountain Grove, P. Evans, Director.

Pear Blight. By F. M. Rolfs. (Circular No. 3, pp. 4.)

In this circular notes are given on the host plants and appearance of this disease, life history of the organism, mode of infection, and methods of treatment.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Cover Crops for Young Orchards. By R. A. Emerson. (Bulletin No. 92, pp. 23, figs. 12.)

The results of importance secured at the station in growing cover crops for young orchards from 1899 to date are summarized in this bulletin.

Nineteenth Annual Report, 1905. (Annual Report, 1905, pp. 117, pls. 20.)

This contains a report by the director reviewing the work of the station during the year, a financial statement for the fiscal year ended June 30, 1905, and the following special articles: Report on the plant diseases prevalent in Nebraska during the season of 1905, the relation of early maturity to hardness in trees, poisoning of horses by the common horse-tail weed (*Equisetum arvense*), and copper salts as a supposed preventive of hog cholera.

NEVADA STATION, Reno, J. E. Stubbs, Director.

The Weather of 1905. By S. B. Doten. (Bulletin No. 60, pp. 19, chart 1.)

This bulletin gives the monthly weather conditions during the past year, together with annual summaries in which the records for 1905 are compared with the averages of conditions during the preceding seventeen years.

Ornamental and Shade Trees. By P. B. Kennedy. (Bulletin No. 61, pp. 61, figs. 27.)

This bulletin is designed to furnish information to residents of Nevada along "the line of ornamental trees that are best adapted for beautifying and providing shade and comfort for our streets and home grounds." Directions are given for the purchasing, planting, pruning, and care of foreign and domestic ornamental trees and shrubs.

Annual Report, 1905. (Annual Report, 1905, pp. 45, pls. 7.)

This contains a report by the director, which reviews the work of the station during the year and gives the salient features of the irrigation and reclamation projects being carried on in the State, a financial statement for the fiscal year ended June 30, 1905, and reports by the heads of the various departments.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

The Duty of Well Water and the Cost and Profit on Irrigated Crops in the Rio Grande Valley. By J. J. Vernon, A. E. Lovett, and J. M. Scott. (Bulletin No. 56, pp. 52, figs. 4.)

The results of cooperative irrigation and drainage investigations between the station and this Office are reported in this bulletin.

European Grapes. By F. Garcia. (Bulletin No. 58, pp. 32, figs. 6.)

This bulletin gives the experience of the station with foreign grapes for a number of years, including descriptions of varieties tested, notes on satisfactory varieties, observations on the crown-gall, and cultural notes. An article on "The Crown-gall Disease of the Grape Vine," by G. G. Hedgecock, of the Bureau of Plant Industry of this Department, is included.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Inspection of Feeding Stuffs. (Bulletin No. 280, pp. 231-260.)

The results of analyses of 316 samples of feeding stuffs collected by the Commissioner of Agriculture during the fall of 1905 and winter of 1905-6 are reported and published without comment by the director of the New York Agricultural Experiment Station.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Foods and Food Products. Whiskey and Other Beverages. Drugs and Medicines. By E. F. Ladd et al. (Bulletin No. 69, pp. 50.)

Analyses are reported of various food and other products examined in the course of food inspection since January 1, 1903, to the date of issue of the bulletin.

Paints and Their Composition. By E. F. Ladd and C. D. Holley. (Bulletin No. 70, pp. 51-136.)

This bulletin discusses various topics regarding the ingredients, manufacture, and cost of paints, and reports analyses of a large number of white leads and mixed paints found on sale in the State in 1906.

Pure Food Law—Amended and Reenacted, Pure Drug Law, Formaldehyde Law, Paris Green Law, Paint Law, Rulings and Discussions. By E. F. Ladd. (Special Bulletin No. 3, pp. 22.)

In this bulletin the essential features of each bill are presented, "together with some rulings and interpretations for the guidance of interested parties."

OHIO STATION, Wooster, C. E. Thorne, Director.

Orchard Culture. By W. J. Green and F. H. Ballou. (Bulletin No. 171, pp. 187-215, figs. 18.)

A comparison is given of different methods of culture as applied in the care and management of apple orchards.

Dependable Fruits. By W. J. Green and F. H. Ballou. (Circular No. 55, pp. 4.)

A list is given of orchard and small fruits that have been found best adapted to Ohio conditions of soil and climate.

The Early and Late Blight of Potatoes and How to Combat Them. By W. J. Green and C. W. Waid. (Circular No. 58, pp. 4.)

Brief notes on this subject.

OKLAHOMA STATION, Stillwater, J. Fields, Director.

Alfalfa. By F. C. Burtis and L. A. Moorhouse. (Bulletin No. 71, pp. 12.)

Notes are given on the uses, value, culture, and harvesting of alfalfa in Oklahoma.

Tests of Dips as Lice Killers. By L. L. Lewis. (Bulletin No. 72, pp. 8.)

Tests of various dips for the destruction of lice on farm stock, with notes on the use of oil and pasture rotation for destroying Texas fever ticks.

Fifteenth Annual Report, 1906. (Annual Report, 1906, pp. 13-63, figs. 2.)

This contains a report of the director, a summary of press bulletins issued during the year, data regarding the annual precipitation of Oklahoma and Indian Territory, and a financial statement for the fiscal year ended June 30, 1906.

PENNSYLVANIA STATION, State College, H. P. Armsby, Director.

Annual Report, 1905. (Annual Report, 1905, pp. 236, pls. 8, figs. 2.)

This report contains a financial statement for the fiscal year ended June 30, 1905, reports by the director and heads of departments, and the following special articles: Plan for a soil test with fertilizers, experiments in growing Sumatra tobacco under shelter tent, 1903, composition of soy beans, condimental and tonic stock foods, alfalfa as a forage crop of Pennsylvania, forage and soiling experiments, 1904, preliminary observations on protein supply of dairy herd, experiment in steer feeding, 1904-5, relative values of feeding stuffs, energy values of red clover hay and maize meal, distillers' dried grains v. cotton-seed meal as a source of protein, and small fruits in 1904. Detailed meteorological records for 1904 are included in an appendix.

PORTO RICO STATION, Mayaguez, D. W. May, Special Agent in Charge.

Vegetable Growing in Porto Rico. By H. C. Henricksen. (Bulletin No. 7, pp. 58, pls. 10, figs. 2.)

This bulletin gives the results attained at the station in growing, harvesting, and marketing a large number of vegetables, many of which are native to temperate regions, with notes on the modification of cultural methods required under Porto Rican conditions. Many of the vegetables are illustrated. Notes are also given on the insect enemies and fungus diseases of these plants with methods of treatment.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Commercial Feeding Stuffs. By H. J. Wheeler et al. (Bulletin No. 112, pp. 75-96.)

"This bulletin contains the analyses of such commercial feeding stuffs as have been sampled during the autumn of 1905 and the winter and spring of 1906."

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Analyses of Commercial Fertilizers. (Bulletin No. 119, pp. 37.)

This bulletin contains the analyses of 655 samples of fertilizers collected during the season of 1905-6, and previously published in 20 weekly bulletins issued from February to May, 1906.

A Preliminary Report on the Blast of Rice with Notes on Other Rice Diseases. By H. Metcalf. (Bulletin No. 121, pp. 43.)

This bulletin gives the results of cooperative studies between the station and the Bureau of Plant Industry of this Department on the diseases of rice, particularly in South Carolina, in both field and laboratory.

Calf Scours: A New Method of Treatment. By L. A. Klein. (Bulletin No. 122, pp. 9.)

Experiments to test the efficacy of formalin in preventing this disease are reported in this bulletin.

Forage Crops Grown at Coast Land Experiment Station. By W. D. Garrison. (Bulletin No. 123, pp. 15.)

The purpose of this bulletin is to give the date of planting and harvesting, to describe briefly and to give results obtained with forage crops grown at the Coast Land Experiment Station.

Seventeenth Annual Report, 1904. (Annual Report, 1904, pp. 26.)

This contains the organization list of the station, a financial statement for the fiscal year ended June 30, 1904, reports by the vice-director and heads of departments, and a list of bulletins issued during the year.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

Alsike Clover. Ill Effects Sometimes Produced on Horses and Mules Pastured Exclusively upon Alsike. By H. A. Morgan and M. Jacob. (Bulletin Vol. XVIII, No. 3, pp. 22-30, figs. 2.)

The failure of red clover in the State for a number of years is noted, and directions for growing alsike clover as a substitute are given. The cause, symptoms, and treatment of a disease of horses and mules pastured on alsike fields are also discussed.

The Control of Insects, Fungi, and Other Pests. By G. M. Bentley. (Bulletin Vol. XVIII, No. 4, pp. 31-45, figs. 2.)

This bulletin consists of a compilation of suggestions on the preparation and use of various insecticidal and fungicidal formulas for the control of insects, fungi, and other pests.



Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 47-63, figs. 2.)

This contains the report of the director noting the changes in the staff and reviewing the work of the station during the year, reports of the heads of departments, and a financial statement for the fiscal year ended June 30, 1905.

UTAH STATION, Logan, P. A. Yoder, Director.

Agricultural Reconnaissance of the Uinta Indian Reservation. By W. W. McLaughlin. (Bulletin No. 93, pp. 23.)

This bulletin describes the topography, climate, water supply, and classes of soil of the Uinta Reservation, and the agricultural possibilities of this region are presented.

Summary of Pig Feeding Experiments at the Utah Experiment Station with Deductions from the Same. By F. B. Linfield. (Bulletin No. 94, pp. 25-62.)

The results of experiments conducted from 1890 to 1902, inclusive, are reported in this bulletin.

Codling Moth Work in 1904. By E. D. Ball and E. G. Peterson. (Bulletin No. 95, pp. 63-107, charts 12.)

Tests in 1904 of the relative values of early and late sprayings and of the effects of banding trees in controlling the codling moth are reported.

Care of Milk on the Farm and the Manufacture of Butter and Cheese. By R. W. Clark and J. A. Crockett. (Bulletin No. 96, pp. 109-135, figs. 4.)

A popular treatment of these subjects. The results of experiments extending over two years in canning cheese and tests in paraffining cheese are also included.

VERMONT STATION, Burlington, J. L. Hills, Director.

Commercial Fertilizers. By J. L. Hills and C. H. Jones. (Bulletin No. 123, pp. 137-204.)

This bulletin gives the results of fertilizer inspection in 1906, discusses the relation between selling price and valuation of fertilizers, the purchase of plant food, and the moisture relations of soil, and reports analyses of 131 brands of licensed fertilizers for the five years 1902 to 1906.

WASHINGTON STATION, Pullman, E. A. Bryan, Director.

Two Insect Pests of the Elm. By A. L. Melander. (Bulletin No. 74, pp. 7, fig. 1.)

In this bulletin descriptive and life history notes are given on the elm bark-louse (*Gossyparia ulmi*) and the elm leaf-louse (*Schizoneura americana*), and methods of treatment are suggested.

The Codling Moth in the Yakima Valley. By A. L. Melander and E. L. Jenne. (Bulletin No. 77, pp. 96, pls. 13, figs. 7.)

This bulletin gives a detailed report of investigations on the life history of the codling moth and, based on the information secured, the results of comparative tests by the station of various insecticides used on a commercial scale in some badly infested orchards.

WEST VIRGINIA STATION, Morgantown, J. H. Stewart, Director.

Raising Chicks Artificially. By J. H. Stewart and H. Atwood. (Bulletin No. 98, pp. 170-184, pls. 4.)

The practical results of the artificial incubation and raising of chickens at the station during the past eight or nine years are summarized in this bulletin.



Experiments in the Manuring of a Meadow. By J. H. Stewart and H. Atwood. (Bulletin No. 101, pp. 251-262, pls. 2.)

"The experiment reported in this bulletin shows how an unfertile upland meadow was made to produce an average yield for 6 years of more than 3 tons of hay per acre, the yields gradually increasing from a little more than 1½ tons per acre the first year to a maximum of more than 5½ tons of hay per acre the last year."

Poultry Experiments. By J. H. Stewart and H. Atwood. (Bulletin No. 102, pp. 263-277.)

The results of experiments to determine the value of skim milk for increasing the weight of fowls and for egg production are reported in this bulletin.

Occurrence of Barium in the Ohio Valley Brines and Its Relation to Stock Poisoning. By C. D. Howard. (Bulletin No. 103, pp. 279-295.)

Analyses are given of brines from the Ohio Valley and other localities in the United States, including notes on salt production in West Virginia, the physiological action of barium chlorid, and the antiseptic properties of calcium and barium chlorids.

Feeding Experiments with Milch Cows. By J. H. Stewart and H. Atwood. (Bulletin No. 106, pp. 335-345, pl. 1.)

Two tests begun in January and February, 1906, for 20 days with 8 cows and for 45 days with 7 cows, respectively, to determine the most economical ration for milk production are reported. No definite conclusions are drawn.

A Test of Different Sprays for the San José Scale. By W. E. Rumsey and F. E. Brooks. (Bulletin No. 107, pp. 347-354.)

The results of tests with Target Brand Scale Destroyer, Scalecide, Kil-o-Scale, and Horieum are reported in this bulletin.

WISCONSIN STATION, Madison, W. A. Henry, Director.

The Manufacture of Whey Butter at Swiss Cheese Factories. By E. H. Farrington. (Bulletin No. 132, pp. 32, figs. 17.)

This bulletin is the first of a series in preparation with especial reference to the promotion of the Swiss cheese industry in Wisconsin, and treats in detail of the methods of whey butter making now practiced, with suggestions for improving the various processes. A German translation of the article is included in the bulletin.

Practical Directions for Preserving Native Fruits and Vegetables. By Mrs. L. H. Adams and E. P. Sandsten. (Bulletin No. 136, pp. 13.)

This bulletin was designed to encourage the culture of native fruits and vegetables, and a number of tested recipes are presented.

Conditions which Affect the Time of the Annual Flowering of Fruit Trees. By E. P. Sandsten. (Bulletin No. 137, pp. 21.)

Tabulated data and notes relating to this subject.

Twenty-second Annual Report, 1905. (Annual Report, 1905, pp. VII+397, figs. 93, map 1.)

This report gives a summary by the director of the work of the station during the year, including the changes in organization and a list of the bulletins issued during the years 1883-1905, inclusive, a financial statement for the fiscal year ended June 30, 1905, a list of exchanges and acknowledgments, and special articles on the following subjects: Whole corn compared with corn meal for fattening pigs (ninth year trial), soy beans versus wheat middlings as a supplement to corn meal for growing and fattening pigs, feeding cotton-seed meal to swine, middlings and ground barley versus middlings and corn meal as a grain ration for young sows, the value of various grain rations for fattening wethers, the production of winter lambs, exercise versus confinement in winter for young wethers, the value of soy beans in grain rations for lambs, the university dairy herd 1904-5, dried beet pulp or molasses beet pulp for dairy cows, influence of dehorning and tuberculin testing on the milk secretion of dairy cows, official tests of dairy cows 1904-5, the addition

of salt to the ration of dairy cows, the Swiss cheese industry of Wisconsin, whey butter making, cleaning test bottles, an alkaline tablet solution measuring bottle, estimating the amount of water in butter by the overrun obtained in each churning, the influence of changes of temperature on the results obtained with a lactometer in calculating milk solids, the relation of lactic-acid bacteria to the formation of butter flavor in milk serum, lactose-fermenting yeasts (the cause of an abnormal fermentation in Swiss cheese), on the detection of a tainted condition in pasteurized milk, bacteriological test of a bottle-washing device, studies on pasteurization of milk in a "continuous flow" machine (Miller apparatus), inoculation experiments with alfalfa and soy beans, studies of Wisconsin soils, cranberry investigations, excessive feeding as a factor in producing variation in tomatoes, directions for checking the ravages of the cottony scale which frequently causes great havoc and even death to soft maple shade trees, report of State nursery inspection 1905, experiments with grain and forage plants 1905, experiments with sugar beets—season 1905, the number and distribution of silos in Wisconsin, accidents by farm machinery, feeding stuff and fertilizer inspection in Wisconsin 1905, and laws pertaining to horse breeding in Wisconsin.

WYOMING STATION, Laramie, B. C. Buffum, Director.

Digestion Experiments with Wethers. By H. G. Knight, F. E. Hepner, and G. E. Morton. (Bulletin No. 69, pp. 42, figs. 4.)

Experiments conducted with two high-grade, range-reared Rambouillet wethers to determine the digestibility of alfalfa and native hay are reported and discussed in detail.

Wyoming Forage Plants and Their Chemical Composition—Studies No. 2. By H. G. Knight, F. E. Hepner, and A. Nelson. (Bulletin No. 70, pp. 75, pl. 1, figs. 31.)

This bulletin gives descriptions and illustrations, with chemical analyses, of some of the more important native and introduced forage plants of the State, and the value of these plants in stock raising is discussed.



# United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

## LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING SEPTEMBER AND OCTOBER, 1906.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Experiments with Oats. By J. F. Duggar. (Bulletin No. 137, pp. 57-94, figs. 8.)

Experiments conducted at the station extending over a period of ten years are summarized in this bulletin, including notes on yield, varieties, culture, diseases, fertilizers, and oats as a hay crop.

Two Important Scale Insects and Their Control. By W. T. Clarke. (Circular No. 1, pp. 8.)

This circular contains reprints of sections from the horticultural laws of Alabama, and gives historical, descriptive, and remedial notes on the San José scale (*Aspidiotus perniciosus*) and the new West Indian peach scale (*Aulacaspis pentagona*).

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Irrigating Sediments and Their Effects Upon Crops. By R. H. Forbes. (Bulletin No. 53, pp. 55-98, figs. 9.)

This is the first of a series of bulletins upon the relations between irrigating sediments and farm crops. In this bulletin the fertilizing and physical effects of sediments upon soils are presented.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

Commercial Fertilizers. By G. Roberts. (Bulletin No. 179, pp. 57-83.)

This bulletin gives the results of fertilizer inspection work, including analyses and valuation of samples, for the second half of the fiscal year 1905-6, the results of the first half year having been published in Bulletin No. 173.

The Disinfection of Stables. By C. M. Haring. (Circular No. 19, pp. 3.)

Brief directions are given for use in combating infectious diseases among live stock kept in stables.



The Advancement of Agricultural Education. By E. J. Wickson. (Circular No. 21, pp. 8.)

This is an address by the author delivered at a meeting of Oakland Grange Patrons of Husbandry, in Oakland, Cal., July 7, 1906.

Olive Pickling. By F. T. Bioletti. (Circular No. 24, pp. 14, figs. 12.)

Notes are given in this circular on the nutritive value of olives; gathering, grading, and sorting the fruit; methods employed in pickling and preserving ripe and green olives; and the different varieties of olives suitable for pickling. Many of the varieties are illustrated.

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

Flora of Colorado. By P. A. Rydberg. (Bulletin No. 100, pp. XXII+448.)

A complete catalog is presented in this bulletin of the flora of the State based mainly on the collections of the Colorado Agricultural College and the herbaria at the New York Botanical Garden. The specimens are classified according to subkingdoms, classes, orders, and families. A gazetteer of localities mentioned giving location and elevations and a detailed index are included.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Chestnut in Connecticut and the Improvement of the Wood Lot. By A. F. Hawes. (Bulletin No. 154, pp. 41, pls. 11, dgms. 3.)

This bulletin discusses the natural history and improvement of a wood lot, harvesting and estimating the timber, lumbering, relative profit from ties, piles, poles, and lumber, rate of growth of chestnut, and other subjects relative to the development of forestry in Connecticut.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

Seventeenth Annual Report, 1905. (Annual Report, 1905, pp. 224, figs. 16.)

This report contains a list of publications available for distribution, a financial statement for the fiscal year ended June 30, 1905, reports by the director and the heads of departments, special articles on testing cows for advanced registry, fungi in cheese ripening, experiments on the digestibility of fish and poultry, dietary studies of a week's walking trip, studies of market milk, meteorological observations, and reprints of Bulletins 35 and 36 of the station.

GEORGIA STATION, Experiment, Martin V. Calvin, Director.

Fertilization. By R. J. Redding and H. N. Starnes. (Bulletin No. 72, pp. 121-143.)

"The purpose of this bulletin is to furnish a handy manual for the use of farmers concerning the methods of culture of the leading farm, orchard, and garden crops of the South, and the formulation of fertilizers for the same."

ILLINOIS STATION, Urbana, E. Davenport, Director.

Storage Barn, Sheds, Feed Lots, and Other Equipment for Feeding Experimental Cattle in Carload Lots. By H. W. Mumford and E. S. Good. (Bulletin No. 110, pp. 301-324, figs. 15.)

"This bulletin shows the conditions surrounding the feeding of the experimental carload lots of cattle at this station as reported in Bulletins 83, 90, 103, and 111." A description is also given of the construction and operation of the storage barn and equipment, including cost of constructing and maintaining the whole experimental plant.



Maintenance Rations for Beef Breeding Cows. By H. W. Mumford. (Bulletin No. 111, pp. 323-342, figs. 4.)

The object of the experiment reported in this bulletin was to compare cheap feeds readily available on Illinois farms for maintaining beef breeding cows during the winter season.

Detailed Bill of Material for Storage Barn, Sheds, Feed Lots, and Other Equipment for Feeding Experimental Cattle in Carload Lots. By H. W. Mumford and E. S. Good. (Circular No. 104, pp. 10.)

KANSAS STATION, Manhattan, C. W. Burkett, Director.

Variations in the Test of Separator Cream. By C. W. Melick. (Bulletin No. 137, pp. 203-211.)

The chief causes of the variation in the quality of cream and the amount of variation in each case are pointed out in this bulletin.

Effect of Bacteria in Wash Water of Butter. By C. W. Melick. (Bulletin No. 138, pp. 211-222, figs. 2.)

This bulletin reports a series of experiments made under different conditions of atmosphere, temperature, and environment for the purpose of determining the amount of contamination from various forms of bacteria, their habit, method of contamination, and their destruction and prevention in water used in butter making.

The Study of Corn. By V. M. Shoesmith. (Bulletin No. 139, pp. 221-249, figs. 12.)

This bulletin, prepared for use in the boys' corn contests, which are being conducted under the direction of Kansas College, makes no attempt to present an exhaustive study of corn, but rather to furnish a guide in elementary corn judging to those unable to receive practise work in high schools or agricultural colleges.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Our Available Stock Foods. By W. H. Dalrymple. (Bulletin No. 86, pp. 74, figs. 11.)

The purpose of this bulletin is to call the attention of owners of live stock to Louisiana products and by-products available as feeding stuffs and to show how they may be intelligently utilized to the best advantage. Analyses of the various feeding stuffs are included.

MAINE STATION, Orono, C. D. Woods, Director.

Poultry Experiments, 1905-6. By G. M. Gowell. (Bulletin No. 130, pp. 99-132, pls. 5.)

This bulletin contains an account of the recent additions to the station poultry plant, the Go-Well Poultry Farm, methods for the selection of breeding stock, detailed accounts of methods of feeding chickens and hens, and experiments upon fertility of eggs.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. XX + 240, figs. 77.)

This report contains a summary by the director of the work of the various departments of the station during the year, a financial statement for the year ended June 30, 1905, and reprints of Bulletins 94-103, inclusive, of the station.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. XII + 126, pl. 1, figs. 43.)

This report contains a brief summary by the director of the work of the station during the year, a financial statement for the year ended June 30, 1906, and reprints of Bulletins 104-109, inclusive, of the station.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 212, pp. 4.)

This is a summary for August, 1906.

Meteorological Observations. By J. E. Ostrander and R. C. Lindblad. (Meteorological Bulletin No. 213, pp. 4.)

This is a summary for September, 1906.

MINNESOTA STATION, St. Anthony Park, St. Paul, W. M. Liggett, Director.

Ornamental Trees, Shrubs, and Herbaceous Plants in Minnesota. By S. B. Green. (Bulletin No. 96, pp. 237-354, figs. 108.)

This bulletin gives information based upon experimental tests as to the best material suitable for ornamental planting in Minnesota, many of the specimens being illustrated.

Thirteenth Annual Report, 1905. (Annual Report, 1905, pp. XIII + 283, pls. 2, figs. 191.)

This contains a report by the director, including a financial statement to June 30, 1905, and a review of the work of the departmental divisions of the station and of the branch experimental farms, and reprints of Bulletins 87 to 92, inclusive, of the station.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 35.)

This contains a report by the director, financial statements covering the expenditures of the station and branch stations for the fiscal year ended June 30, 1905, brief reports by the heads of departments, and a report of work at the McNeill branch station.

MISSOURI STATION, Columbia, H. J. Waters, Director.

Directions for Making Bordeaux Powder. By R. M. Bird. (Circular of Information No. 20, pp. 4.)

Brief notes are given on making Bordeaux powder as a substitute for liquid Bordeaux.

MISSOURI FRUIT STATION, Mountain Grove, P. Evans, Director.

Pruning Peach Trees. By F. Horsfall. (Circular No. 2, pp. 4.)

This circular calls attention to the importance of careful work in pruning peach trees. Notes are given on the time to prune and best methods of doing the work.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Food Adulteration in Montana. By F. W. Traphagen. (Bulletin No. 61, pp. 133-180.)

In this bulletin the subject of food adulteration is discust, the opinions of American, Canadian, British, and other authorities are quoted, and the results of the examination of a large number of foods in Montana are reported.

Third Annual Report of the State Entomologist. By R. A. Cooley. (Bulletin No. 62, pp. 181-230, pls. 4, figs. 4.)

This bulletin gives descriptive and biological notes on the codling moth (*Carpocapsa pomonella*), plum gouger (*Coccotorus prunicida*), corn worm (*Heliothis armiger*), and white-lined morning sphinx (*Deilephila lineata*). The most reliable remedies for combating these pests are also suggested.

Twelfth Annual Report, 1905. (Annual Report, 1905, pp. 230-305, pls. 3, figs. 17.)

This report contains a financial statement to June 30, 1905; a report by the director which reviews the work of the station and substations and gives a list of publications issued during the year and since the organization of the station, including those available for distribution, and reports by the heads of the various departments which give the results of investigations to November 30, 1905.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Cattle Feeding Experiments. By H. R. Smith. (Bulletin No. 93, pp. 23, fig. 1.)

This is the third experiment of a series, which was conducted during the winter of 1905-6, and includes the following tests: (1) Roughness supplementary to corn for 2-year-old steers the first half of the fattening period, and (2) protein concentrates *vs.* alfalfa as foods supplementary to corn for 2-year-old range steers the second half of the fattening period.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Sixteenth Annual Report, 1905. (Annual Report, 1905, pp. 35.)

This contains a report by the director reviewing the work of the station during the year and giving information regarding periodicals received and publications available for distribution, brief reports by the heads of departments, and a financial statement for the fiscal year ended June 30, 1905.

NORTH CAROLINA STATION, Raleigh, B. W. Kilgore, Director.

Mulberries. By H. H. Hume and F. C. Reimer. (Bulletin No. 194, pp. 35-59, figs. 12.)

This bulletin describes methods of propagating the mulberry and gives notes on soils, planting, cultivation, and pruning this fruit. A description of all the varieties now cataloged or grown in the South is also included.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

A Warning Regarding the Use of Chemical Preservatives in Meats. By E. F. Ladd. (Special Bulletin No. 2, pp. 7.)

This is an appeal to manufacturers and dealers doing business in North Dakota to conform to the law by avoiding the use of chemicals and adulterants in the preservation of meats, preserves, and other food products.

Pure Food Law—Amended and Reenacted, Pure Drug Law, Paint Law, Rulings and Discussions. By E. F. Ladd. (Special Bulletin No. 4, pp. 18.)

This is a partial reprint of Special Bulletin No. 3, with an additional review of the rulings and interpretations, the purpose being to encourage compliance with the spirit of the laws.



OHIO STATION, Wooster, C. E. Thorne, Director.

Blighting of Field and Garden Peas, Chiefly Due to Seed Infection. Powdery Mildew of the Pea. By J. M. Van Hook. (Bulletin No. 173, pp. 229-249, figs. 12.)

In this bulletin notes are given on the appearance, life history, and means of controlling the blight fungus (*Ascochyta pisi*) and powdery mildew fungus (*Erysiphe communis*) of peas.

The Hessian Fly. By H. A. Gossard and J. S. Houser. (Bulletin No. 177, pp. 39, pl. 1, figs. 3.)

This bulletin gives a detailed account of the life history and habits of this insect, a list of food plants, the results of varietal observations on three harvests for the purpose of determining whether or not there are fly-proof varieties, the egg-laying record of the insect for two years, natural enemies, and means of combating this pest.

PENNSYLVANIA STATION, State College, H. P. Armsby, Director.

A Test of Commercial Cultures for Legumes. By G. C. Butz. (Bulletin No. 78, pp. 13.)

The results of inoculation tests with commercial nitro-culture bacteria on alfalfa, vetch, soy beans, and cowpeas, grown in sterilized sand and pots as well as in field experiments, are reported in this bulletin.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Continuous Corn Culture. By G. E. Adams and H. J. Wheeler. (Bulletin No. 113, pp. 97-114.)

This bulletin summarizes the results of growing corn with the use of commercial fertilizers only on the same acre of land from 1894 to 1905, inclusive.

Commercial Fertilizers. By H. J. Wheeler et al. (Bulletin No. 115, pp. 15.)

In this bulletin analyses are reported "of such potato and vegetable fertilizers as have been found on sale in Rhode Island during the spring of 1906; also analyses of similar samples of bone and tankage." Explanations are also given of the plant-food elements contained in fertilizers.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Gathered Cream Plants. By J. Michels. (Bulletin No. 118, pp. 12, dgm. 1.)

This bulletin discusses the value of creameries to South Carolina, their method of organization, construction and operation, and the cost and equipment of creameries.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Crop Rotation. By J. S. Cole. (Bulletin No. 98, pp. 73-103.)

A review is given in this bulletin of the results secured at the station in experiments in crop rotation since 1897, the purpose being to show "what crops deplete the soil of its fertility and reduce its productivity and what crops maintain those qualities, and further, if certain crops are to be grown, the combinations or order of succession that is calculated to give the best yields or the greatest immediate returns."

Macaroni or Durum Wheats. By J. H. Shepard. (Bulletin No. 99, pp. 103-115.)

In continuation of Bulletin 92 of the station, tests in 1905 of varieties of macaroni wheat are reported. The data are tabulated and include the yields, milling and moisture qualities, protein content, baking test, and the gluten, gliadin, and sponge tests of the different varieties in comparison with similar data for the same and other varieties for the year 1904.



VIRGINIA STATION, Blacksburg, A. M. Soule, Director.

The Influence of Selected Yeasts upon Fermentation. By W. A. P. Moncure, R. J. Davidson, and W. B. Ellett. (Bulletin No. 160, pp. 97-120, fig. 1, charts 4.)

"This bulletin is designed to explain in a general way the phenomena of fermentation and to discuss the causes of the chemical changes that take place in the transformation of a fruit juice into an alcoholic beverage."

Varieties of Fruit for the Home Orchard. By H. L. Price. (Bulletin No. 161, pp. 121-144, figs. 13.)

The results of varietal studies at the station with summer and winter apples, crab apples, quinces, pears, peaches, plums, cherries, grapes, and small fruits are reported.

Improving the Quality of Cream from Inferior Milk. By W. D. Saunders. (Bulletin No. 162, pp. 145-156, figs. 2.)

The results of experiments conducted at the station in preparing and shipping cream from composite samples of milk of various grades of quality and condition of sweetness are reported in this bulletin.

WASHINGTON STATION, Pullman, E. A. Bryan, Director.

Preserving Eggs. By R. W. Thatcher. (Bulletin No. 71, pp. 14.)

The results of experiments in testing various methods of preserving eggs are reported in this bulletin, including directions for packing eggs in water glass solution.

The Chemical Composition of Washington Forage Crops. By R. W. Thatcher. (Bulletin No. 72, pp. 27, fig. 1.)

This is the first report on this subject. The bulletin describes the methods used and samples analyzed, explains the meaning of terms used, and gives tabulated results of analyses.



# United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

## LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING NOVEMBER AND DECEMBER, 1906.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA TUSKEGEE STATION, Tuskegee, G. W. Carver, Director.

The San José Scale in Alabama. By F. H. Cardoza. (Bulletin No. 9, pp. 12, pl. 1.)

This bulletin describes the life history and habits of this insect pest, and gives directions for its control "in simple language for the average farmer to understand and put in practice."

Saving the Sweet Potato Crop. By G. W. Carver. (Bulletin No. 10, pp. 14, figs. 6.)

This bulletin gives the results of investigations covering a period of five years as to the best methods of harvesting and caring for the sweet-potato crop in Southern States.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

Resistant Vineyards. By F. T. Bioletti. (Bulletin No. 180, pp. 85-144, figs. 30.)

This bulletin describes in detail the best methods of procedure with regard to grapevines resistant to phylloxera in California, especial emphasis being laid on the details of grafting, planting, and nursery work.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 13.)

This report contains a list of publications issued during the year indicating the principal lines of station work, a complete list of bulletins published since the organization of the station, and a detailed statement of receipts and expenditures to June 30, 1906.

KANSAS STATION, Manhattan, C. W. Burkett, Director.

Milking Machines. By O. Erf. (Bulletin No. 140, pp. 67, figs. 51.)

This bulletin contains a statement of the principles upon which milking machines have been constructed, illustrated descriptions of over 70 of the more important machines which have been invented since 1878, detailed directions for installing and operating milking machines, and a report upon experiments conducted at the Kansas station.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Analyses of Commercial Fertilizers and Paris Green. By J. E. Halligan. (Bulletin No. 87, pp. 50.)

The results of inspection work for the season of 1905-6 are reported in this bulletin, including notes on the valuation of different fertilizers.

Analyses of Commercial Feeding Stuffs. By J. E. Halligan. (Bulletin No. 88, pp. 61.)

In this bulletin notes are given on the explanation of terms, the value of the feeding-stuff law, and the quality and character of various feeds, and detailed results of the inspection work for the season of 1905-6 are reported.

MAINE STATION, Orono, C. D. Woods, Director.

Indian Corn as Food for Man. Digestion Experiments with Chestnuts. By L. H. Merrill. (Bulletin No. 131, pp. 131-148.)

This bulletin contains analyses of Indian corn products; an account of digestion experiments in which corn formed a large part of the diet, with a discussion of the results obtained; and the results of two digestion experiments in which chestnut flour made a prominent part of the diet.

Plant Breeding in Relation to American Pomology. By W. M. Munson. (Bulletin No. 132, pp. 147-176.)

This bulletin briefly epitomizes the history of plant breeding as applied to the development of American fruits. The subjects discussed are: Beginnings of systematic breeding; the development of American pomology; results of breeding; and unsolved problems.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 214, pp. 4.)

This is a summary for October, 1906.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 215, pp. 4.)

This is a summary for November, 1906.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

A Plan for the Improvement of Michigan Cattle. By R. S. Shaw. (Bulletin No. 241, pp. 33-53, figs. 5.)

This bulletin contains preliminary statements regarding animal-breeding experiments now in progress at the station or about to be undertaken, and also discusses the adoption of better methods in some of the commoner practices of animal breeding as carried on in Michigan at the present time.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Fattening Pigs on Corn and Tankage. By E. A. Burnett. (Bulletin No. 94, pp. 12.)

This bulletin reports the results of experiments in pig feeding by the use of tankage. Three experiments "were made to show the effect of tankage on the rate and the cost of gains," and another experiment was made "to show the effect of food on the strength of bone."

NEW HAMPSHIRE STATION, Durham, W. D. Gibbs, Director.

The Feeding of Farm Stock. By F. W. Taylor. (Bulletin No. 127, pp. 185-208.)

This bulletin has been prepared "with the purpose in view of giving to the farmer some plain definitions of feeding terms and some practical illustrations of feeding tables and how to use them."

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Analyses of Paris Green. By J. P. Street. (Bulletin No. 195, pp. 12.)

This bulletin gives the text of the law, approved April 9, 1906, regulating the



sale of Paris green in the State. Notes are given on the chemistry of Paris green, and analyses of 30 samples collected in the course of State inspection are reported.

**Analyses and Valuations of Commercial Fertilizers.** By J. P. Street, W. P. Allen, and V. J. Carberry. (Bulletin No. 196, pp. 35.)

This bulletin contains the results of fertilizer inspection in New Jersey, including analyses of 248 brands of complete fertilizers, "together with 102 samples of fertilizer supplies, 5 home mixtures, 26 special compounds, and 17 duplicate samples of complete fertilizers."

**Suggestions on the Renewal of the Peach Industry in New Jersey.** By G. F. Warren. (Bulletin No. 197, pp. 46, figs. 19.)

In addition to a report on a field study of the peach industry in New Jersey, this bulletin gives "the results of experiments in dipping peach trees in lime, salt, and sulphur wash before setting, in determining amounts of plant food removed by a peach tree, tests of 'natural' pits, methods of pruning at time of planting, effect of exposure before planting, and a few other experiments."

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

**Steer Feeding.** By J. J. Vernon and J. M. Scott. (Bulletin No. 57, pp. 13, pls. 2.)

The experiment reported in this bulletin "was undertaken primarily for the purpose of securing further data on the comparative value of the rations alfalfa with grain and alfalfa alone for fitting range-grown steers for the local markets."

**Forty Years of Southern New Mexico Climate.** By J. D. Tinsley. (Bulletin No. 59, pp. 43, figs. 5, dgms. 4.)

"This bulletin contains a record of the monthly and annual mean maximum, mean minimum, and mean temperatures, highest and lowest temperatures during each month, number of days with temperature of 32° or less, number of days with temperature of 60° or less, precipitation, relative humidity, condition of the sky, and wind movement for each month and year from 1892 to 1905 as observed at the New Mexico Experiment Station. Also, temperature and rainfall records for other stations in the Mesilla Valley for most of the years between 1851 and 1890."

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

**Commercial Miscible Oils for Treatment of the San José Scale.** By P. J. Parrott, H. E. Hodgkiss, and F. A. Sirrine. (Bulletin No. 281, pp. 259-270.)

This bulletin contains the details of a number of experiments with commercial miscible oils to determine their merits for the control of this insect pest. This work was conducted in three orchards in which 1,368 trees were sprayed with these preparations in varying proportions.

**A Study of the Metabolism and Physiological Effects of Certain Phosphorus Compounds with Milch Cows.** By W. H. Jordan, E. B. Hart, and A. J. Patten. (Technical Bulletin No. 1, pp. 59.)

"The purpose of the investigations herein reported has been to study some of the nutritive relations and functions of the phosphorus compounds of cattle foods. The results reached in the preliminary stages of this work have already been reported in Bulletins Nos. 238 and 250, in which certain conclusions as to the status of phosphorus in feeding stuffs are set forth." The details and results of three separate experiments are reported and discussed.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

**Bleaching of Flour.** By E. F. Ladd and R. E. Stallings. (Bulletin No. 72, pp. 217-235, fig. 1.)

Analyses and baking tests of samples of bleached and unbleached flours are reported. Opinions of many millers and manufacturers as to the advantages and disadvantages of bleaching are also included.

OHIO STATION, Wooster, C. E. Thorne, Director.

A Second Ohio Weed Manual. By A. D. Selby. (Bulletin No. 175, pp. 289-384, figs. 73.)

This is a revised and enlarged edition of Bulletin 83 of the station, and is presented to Ohio cultivators in the hope that it will be of assistance in recognizing and controlling the weeds of the State. In addition to a detailed descriptive illustrated list of Ohio weeds, notes are given on the introduction and spread of weeds, weed legislation, etc.

Meteorological Summary—Press Bulletins—Index. (Bulletin No. 176, pp. 385-414.)

This bulletin contains a summary of meteorological data for 1905, by C. A. Patton, reprints of press bulletins, and an index of all publications issued during the year.

Soil Treatment of Tobacco Plant Beds. By A. D. Selby. (Circular No. 59, pp. 3.)

As a result of experiments this circular recommends the fall application of formalin for the prevention of bed rot (*Rhizoctonia*) and black root (*Thielavia*), and directions for its application are given.

Soluble Oils as Destroyers of San José Scale. By H. A. Gossard. (Circular No. 60, pp. 4.)

Notes are given in this circular on the results of tests in various orchards of commercial soluble oils for the prevention of San José scale.

Score Card for Dent Corn. (Circular No. 61, pp. 3.)

This circular gives the official score card of the department of agronomy of the Ohio Experiment Station for 1906-7, with brief explanatory notes.

Farmers' Institutes. (Circular No. 62, pp. 3.)

A list is given of the members of the station staff available for service at farmers' institutes during the season. The subjects of their addresses are also included.

Twenty-fifth Annual Report, 1906. (Annual Report, 1906, pp. xxi.)

This report contains the text of the Adams Act passed by Congress and which became a law March 16, 1906; the text of the law passed by the Ohio General Assembly providing for the establishment of a department of forestry at the station, approved March 17, 1906; a financial statement for the fiscal year ended June 30, 1906; a report by the director giving the list of publications issued by the station during the year and reviewing the different lines of station work; and a list of bulletins issued during the year.

PENNSYLVANIA STATION, State College, H. P. Armsby, Director.

Alfalfa as a Forage Crop for Pennsylvania. By G. C. Watson. (Bulletin No. 79, pp. 12.)

"The object of this bulletin is to give such information pertaining to the cultivation of alfalfa as the experiment station has been able to gather from various sources where careful observations have been made and accurate results obtained," as well as the results of a few experiments conducted on the station farm and elsewhere in cooperation with the station.

A Comparison of Alfalfa Meal and Wheat Bran for Dairy Cows. By T. I. Mairs. (Bulletin No. 80, pp. 10.)

The plan and results of a feeding experiment with 10 cows of the station herd are discussed in this bulletin.

Commercial Feeding Stuffs. By T. I. Mairs. (Bulletin No. 81, pp. 15.)

This bulletin discusses the specific qualities of some of the more common feeds, including not only the feeds most commonly bought, but the ones which the feeder is most likely to have on hand. A comparison of prices of different feeding stuffs is also included and discussed.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

A Comparison of Nine Different Phosphates upon Limed and Unlimed Land with Several Varieties of Plants. By H. J. Wheeler and G. E. Adams. (Bulletin No. 114, pp. 115-137.)

This bulletin reports the results of phosphatic fertilizer tests with different crops for the years 1900 and 1901.

Corn Selection. By F. W. Card. (Bulletin No. 116, pp. 17-34, figs. 9.)

The purpose of the experiments in corn selection has been to determine how far it is possible to increase the number of ears per plant by selecting from year to year with that end in view, and the results for the years 1899 to 1905, inclusive, are reported in this bulletin.

VIRGINIA STATION, Blacksburg, A. M. Soule, Director.

Origin, Composition, and Utility of Fertilizing Materials. By R. J. Davidson and W. B. Ellett. (Bulletin No. 163, pp. 48.)

The information contained in this bulletin has been compiled from various sources, including the bulletins of several experiment stations, and is designed to answer inquiries from the farmers of the State regarding the composition, use, value, and home mixing of various fertilizing materials.

WISCONSIN STATION, Madison, W. A. Henry, Director.

Land Drainage. By A. R. Whitson and E. R. Jones. (Bulletin No. 138, pp. 40, figs. 15.)

This bulletin discusses the benefits and cost of tile drainage, methods of tile drainage, open ditches, and the laws governing drainage. An appendix contains a description of the instruments used in drainage work, with instructions regarding their use.

The Horse-breeding Industry of Wisconsin. By A. S. Alexander. (Bulletin No. 141, pp. 162, pl. 1, figs. 38.)

This is a report on the horse-breeding industry in the State, with notes on the effects and defects of the present stallion law, recommendations as to new legislation, and a directory of owners of licensed stallions in Wisconsin.











